

タイ 国  
バンコク市下水道整備計画  
フイージビリティ調査報告書  
第3巻 図面集

昭和57年7月

国際協力事業団

開 二

82-113(3/3)


第 3 卷  
図 面 集  
目 次

図	図 面 名 称
1	一 般 図
2	下水道施設平面図
3	下水道施設平面図
4	下水道施設平面図
5	下水道施設平面図
6	管渠縦断面図
7	管渠縦断面図
8	雨水吐室構造図
9	管渠布設標準図およびマンホール構造標準図
10	遮集幹線およびチョンノンシ幹線構造図
11	チュラおよびクローンサットン中継ポンプ場平面図、断面図
12	チャーロンクルン中継ポンプ場平面図、断面図
13	既設管渠縦断面図
14	既設管渠縦断面図
15	既設管渠縦断面図
16	既設管渠縦断面図
17	既設管渠縦断面図

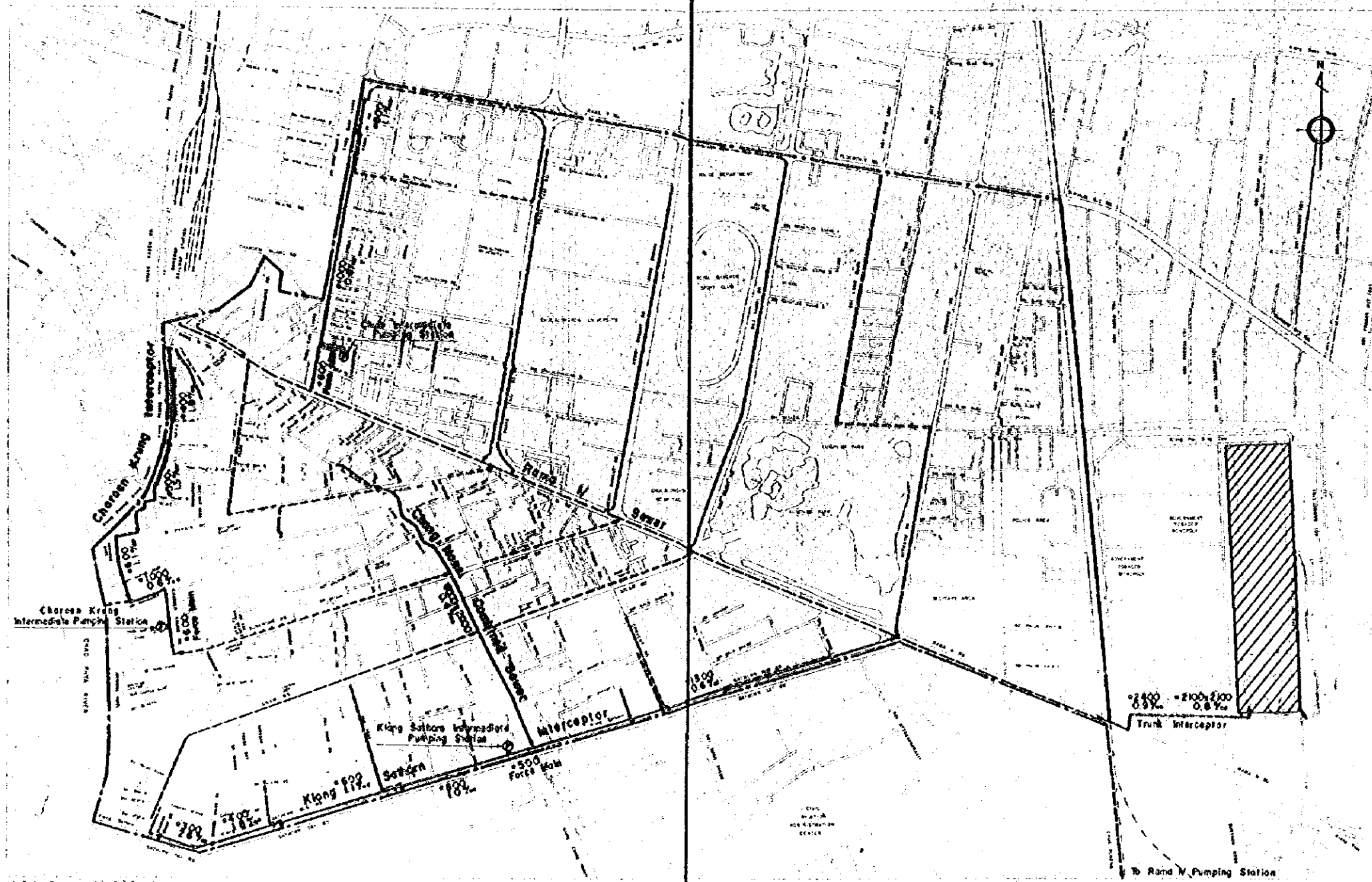
図	図 面 名 称
18	既設管渠縦断面図
19	既設管渠縦断面図
20	処理場平面図（全体計画）
21	処理場平面図（第一期計画）
22	処理場水位関係図
23	処理場フローシート
24	電気結線図
25	管理本館平面図
26	管理本館平面図、断面図
27	沈砂池平面図、断面図
28	エアレーションタンク平面図、断面図
29	最終沈殿池および塩素混和池平面図、断面図
30	濃縮槽平面図、断面図
31	消化槽平面図、断面図
32	天日乾燥床平面図、断面図
33	作業員控室および変電所平面図、断面図

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SCALE 1:10,000

- LEGEND**
- Boundary of Study Area
  - Proposed Sewer
  - Existing Sewer
  - ⊙ Proposed Intermediate Pumping Station
  - ⊙ Proposed Treatment Plant
  - ⊕800 Sewer Diameter in mm
  - 10% Slope (VERT. 1: HORT. 1000)

FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND	
JAPAN INTERNATIONAL COOPERATION AGENCY	NIHON SUDO CONSULTANTS CO. LTD. TOKYO, JAPAN
<b>PLAN OF PROPOSED SEWERAGE SYSTEM</b>	<b>FIGURE 1</b>



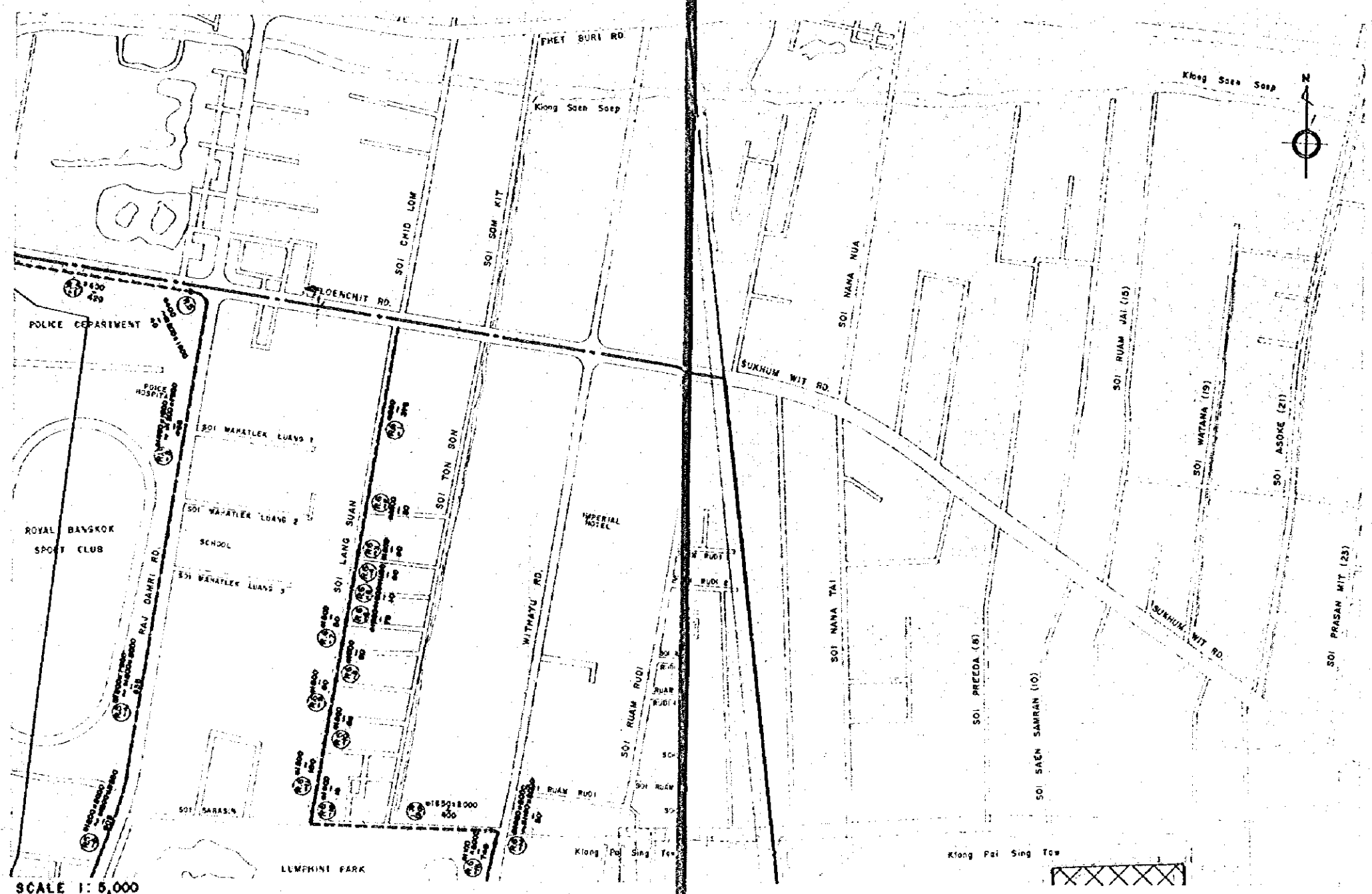
SCALE 1:5,000

- LEGEND**
- Boundary of Study Area
  - Proposed Sewer
  - - - Existing Sewer
  - ⊕ Proposed Intermediate Pumping Station
  - ⊞ Proposed Treatment Plant
  - 400 Diameter (mm)
  - ⑤ 1.8 Sewer Slope (%)
  - 295 Length (m)
  - ▭ Tributary Area
  - Diversion Chamber
  - ⊙ Type I Manhole
  - ⊙ Type II Manhole
  - ⊙ Type III Manhole
  - ⊙ Type IV Manhole
  - ⊙ Type V Manhole
  - Special Manhole

FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY  
NIHON SUDO CONSULTANTS CO. LTD  
TOKYO JAPAN

PLAN OF PROPOSED SEWERAGE SYSTEM  
FIGURE 2



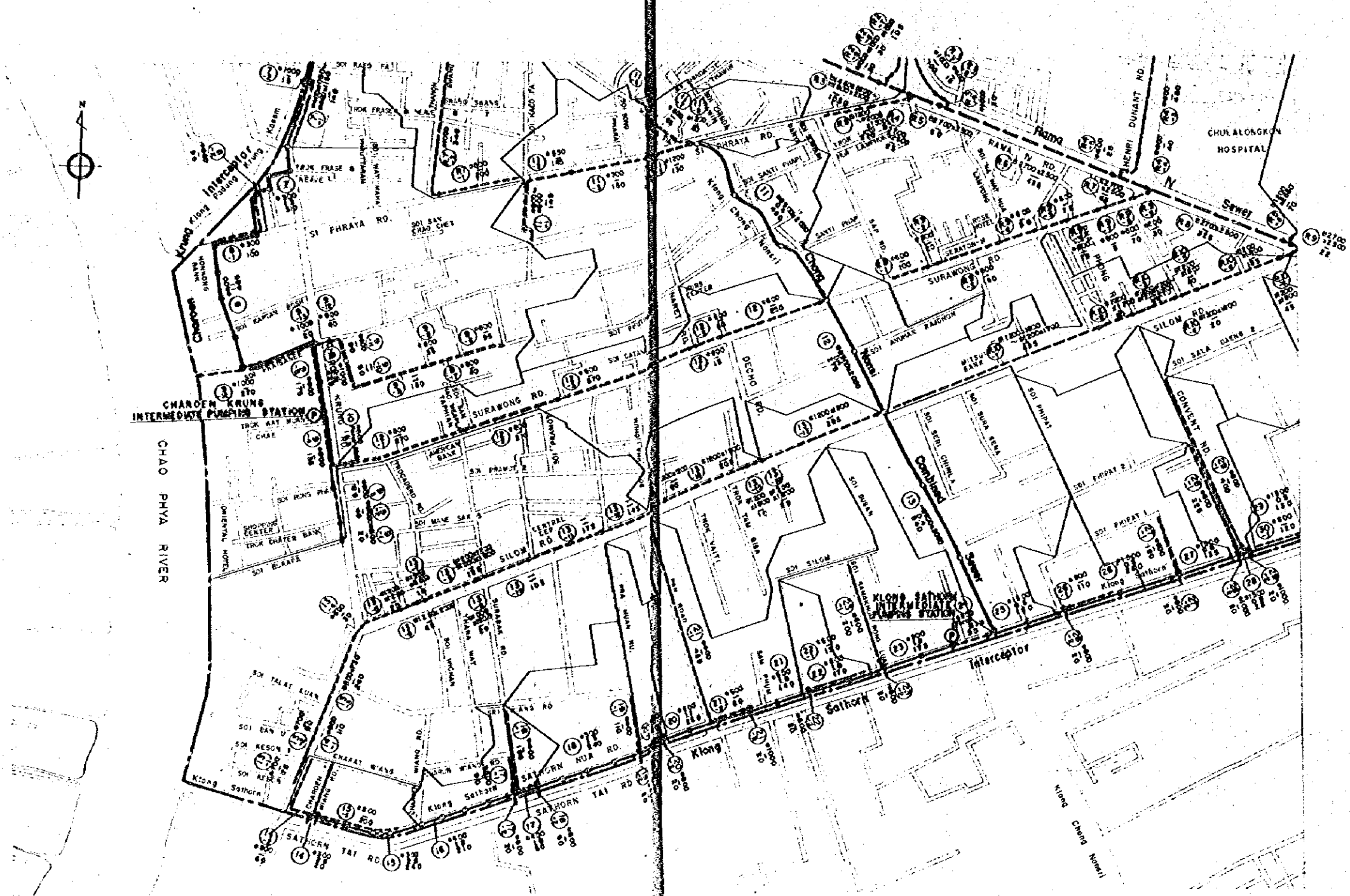
SCALE 1: 5,000

- LEGEND**
- Boundary of Study Area
  - Proposed Sewer
  - Existing Sewer
  - ⊕ Proposed Intermediate Pumping Station
  - ⊕ Proposed Treatment Plant
  - ⊕ 400 Sewer Diameter (mm)
  - ⊕ 1.8 No. Slope (‰)
  - ⊕ 295 Length (m)
  - ▭ Tributary Area
  - Diversion Chamber
  - Type I Manhole
  - ⊕ Type II Manhole
  - ⊕ Type III Manhole
  - ⊕ Type IV Manhole
  - Special Manhole

FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY     NIHOH SUKCO CONSULTANTS CO. LTD.  
TOKYO, JAPAN

**PLAN OF PROPOSED SEWERAGE SYSTEM**     **FIGURE 3**



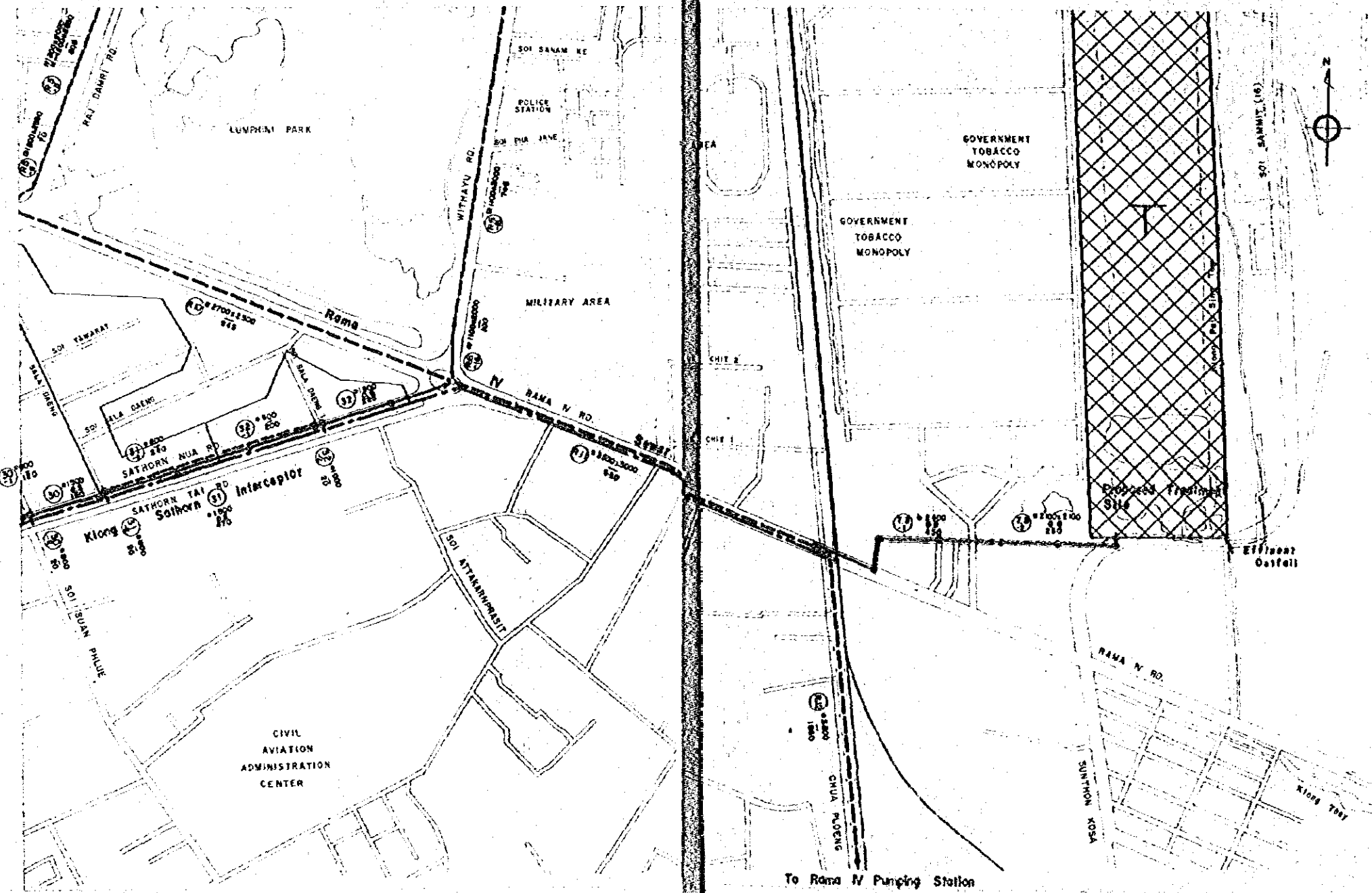
SCALE 1:5,000

- LEGEND**
- Boundary of Study Area
  - Proposed Sewer
  - - - Existing Sewer
  - ⊕ Proposed Intermediate Pumping Station
  - ▨ Proposed Treatment Plant
  - 400 Sewer Diameter (mm)
  - ⊙ 1.8 No. Slope (%)
  - ⊙ 295 Length (m)
  - ▽ Tributary Area
  - Diversion Chamber
  - Type I Manhole
  - ⊙ Type II Manhole
  - ⊙ Type III Manhole
  - ⊙ Type IV Manhole
  - Special Manhole

FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY	NIHON SUDO CONSULTANTS CO., LTD TOKYO, JAPAN
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**PLAN OF PROPOSED SEWERAGE SYSTEM** **FIGURE 4**

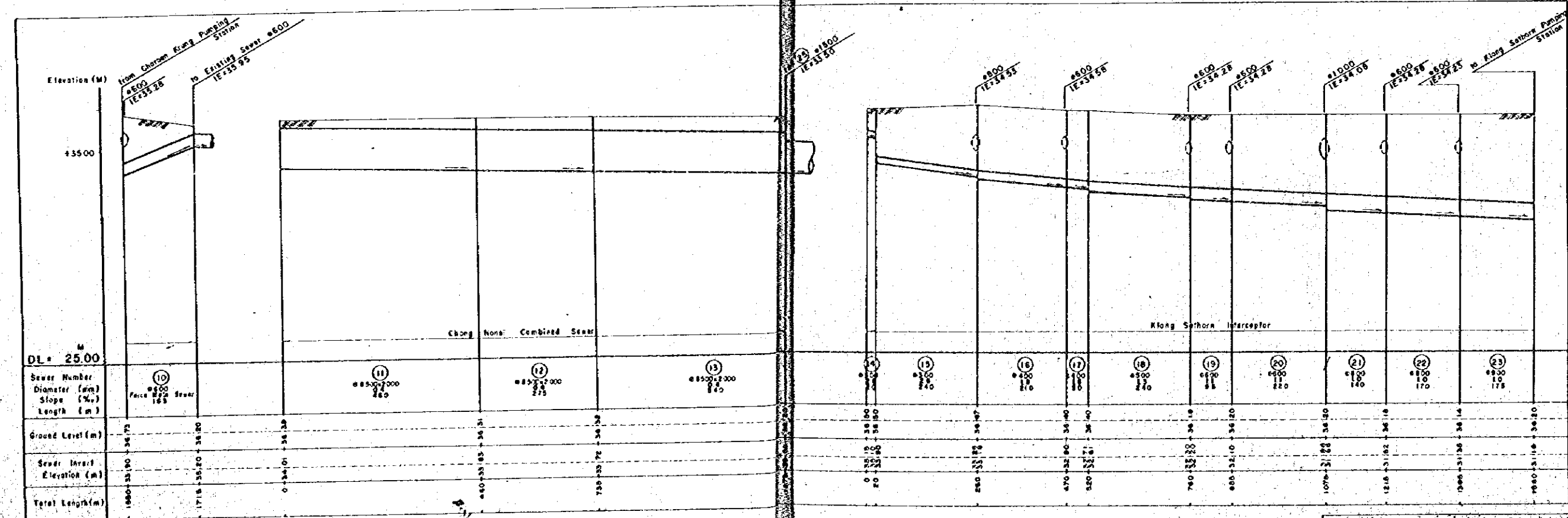
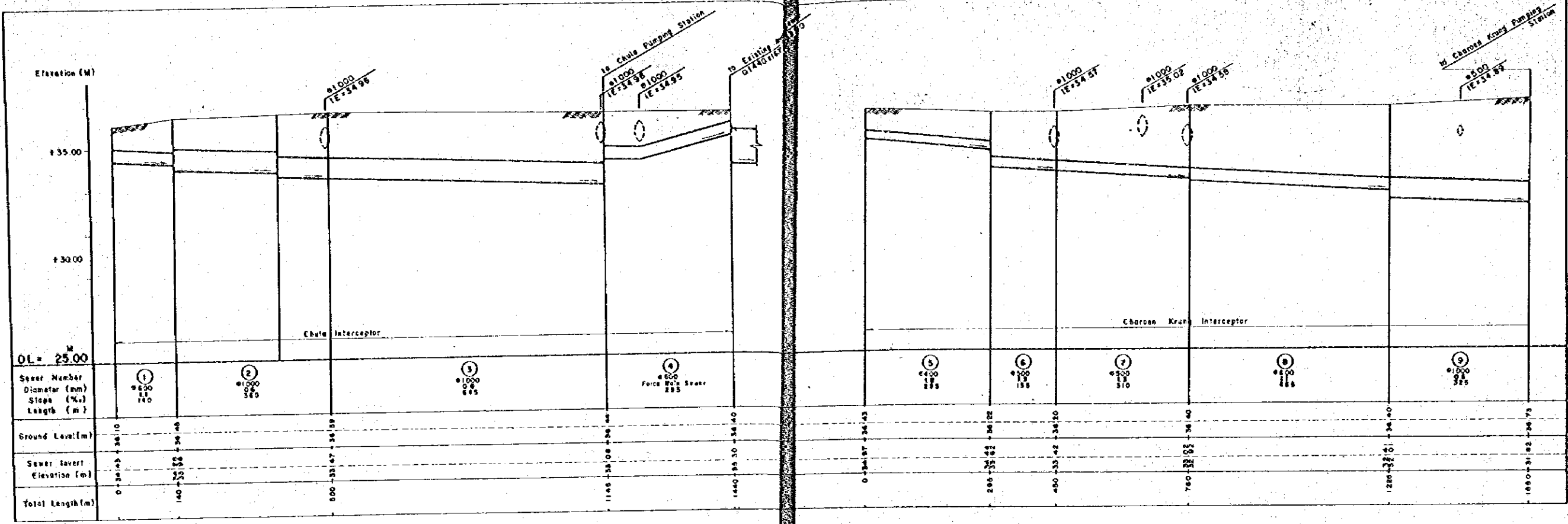


SCALE 1:5,000

**LEGEND**

- Boundary of Study Area
- Proposed Sewer
- - - Existing Sewer
- ⊙ Proposed Intermediate Pumping Station
- ▨ Proposed Treatment Plant
- ⊙ 400 Diameter (mm)
- ⊙ 18 Sewer Slope (%)
- ⊙ 295 Length (m)
- ▭ Tributary Area
- ⊙ Odiversion Chamber
- ⊙ Type I Manhole
- ⊙ Type B Manhole
- ⊙ Type M Manhole
- ⊙ Type W Manhole
- ⊙ Special Manhole

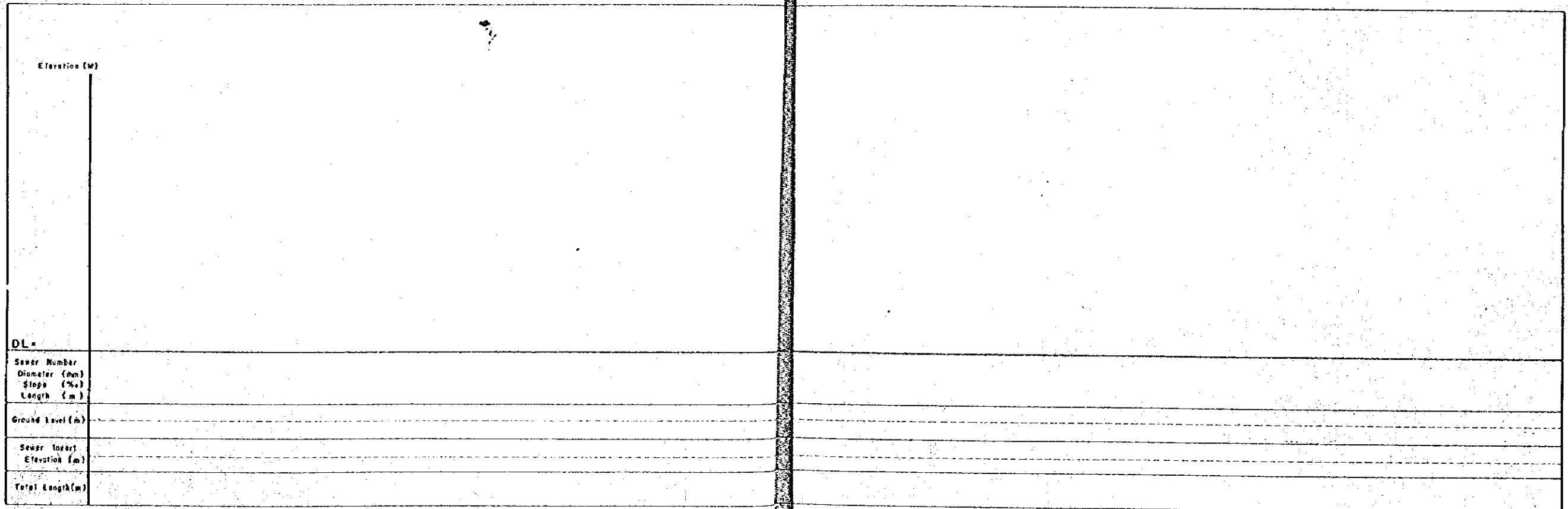
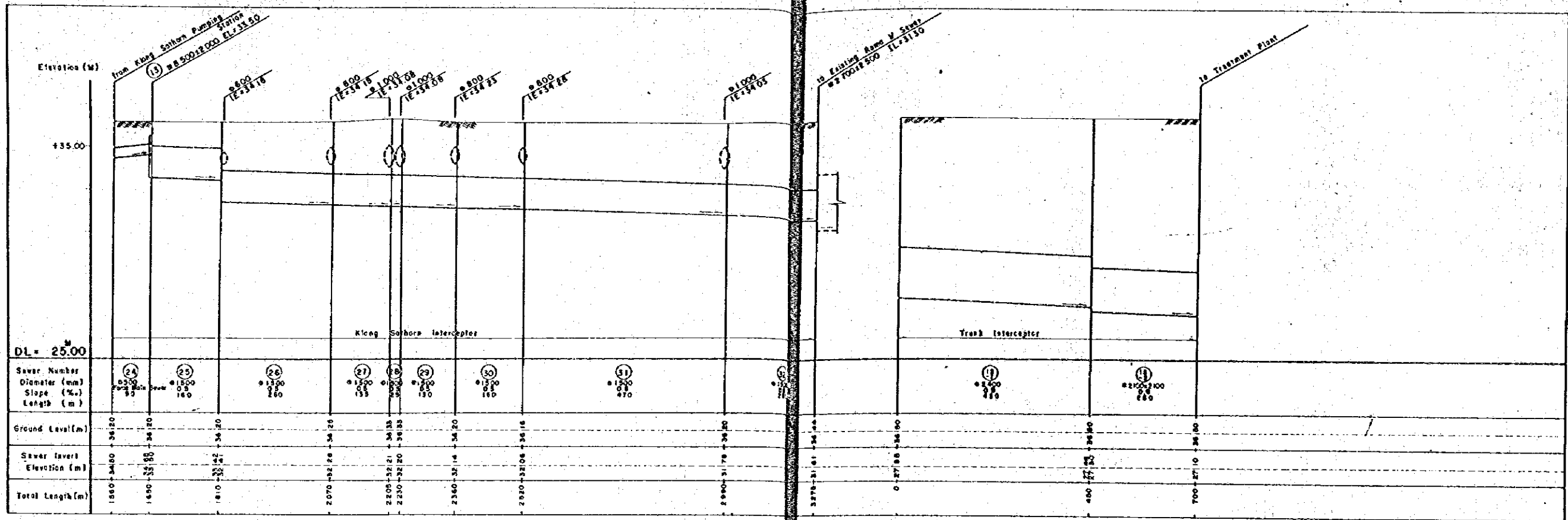
FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND	
JAPAN INTERNATIONAL COOPERATION AGENCY	NSHON SUDO CONSULTANTS CO. LTD. TOKYO, JAPAN
PLAN OF PROPOSED SEWERAGE SYSTEM	FIGURE 6



SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 NIPPON SUDO CONSULTANTS CO., LTD. TOKYO, JAPAN  
 PROFILE OF PROPOSED SEWERS  
 FIGURE 6





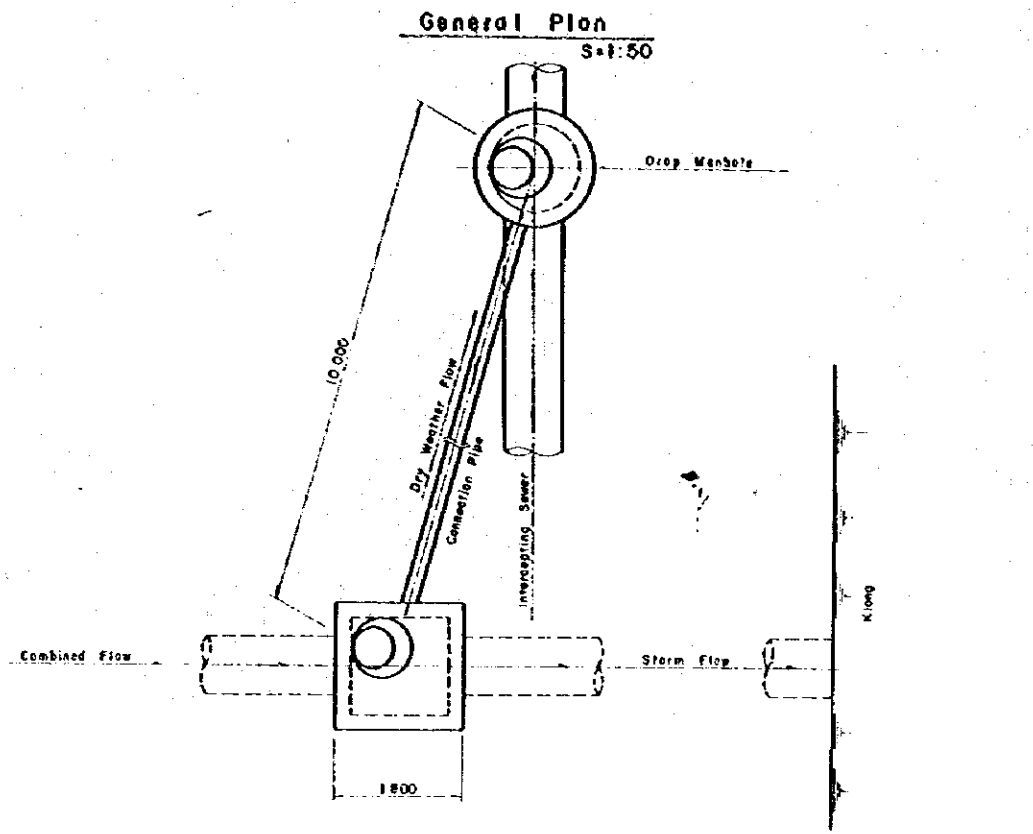
SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK  
 SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
 IN KINGDOM OF THAILAND

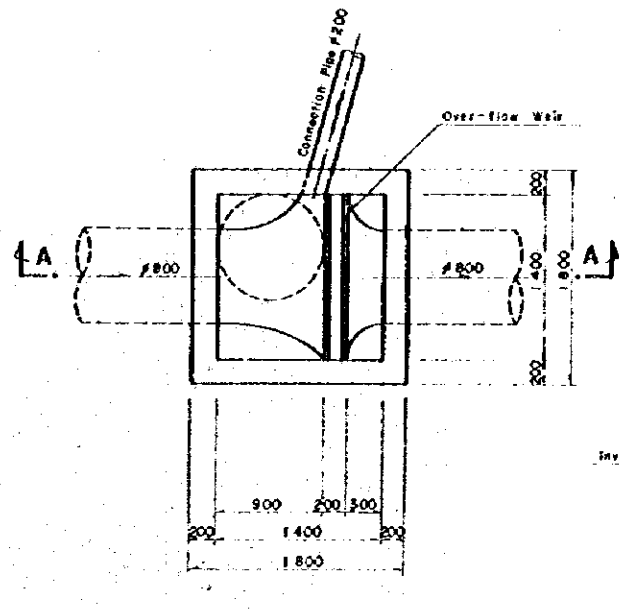
JAPAN INTERNATIONAL COOPERATION AGENCY    NIHON SUDO CONSULTANTS CO., LTD.  
 TOKYO, JAPAN

PROFILE OF PROPOSED SEWERS    FIGURE 7

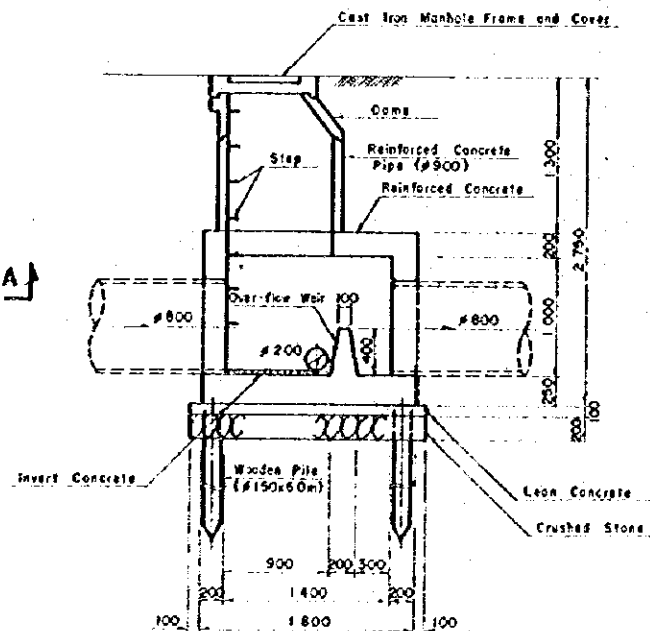
### Diversion Chamber of Over-flow Weir Type



Plan S=1:30



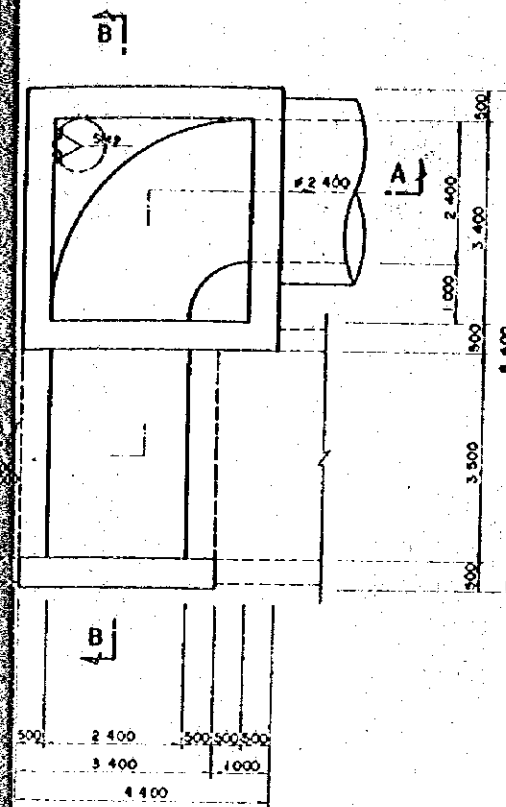
Section A-A S=1:30



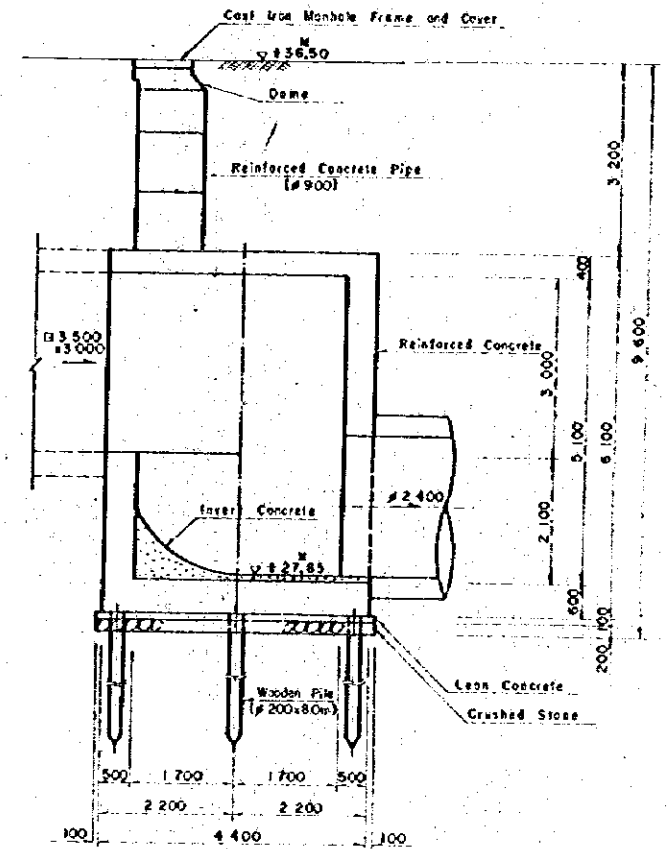
### Diversion Chamber of Leaping Weir Type

S=1:60

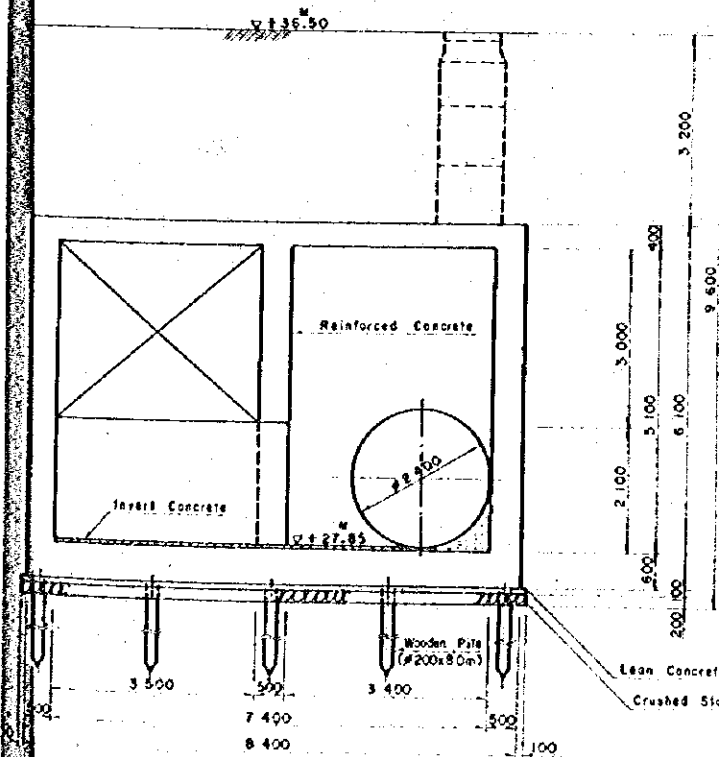
Plan



Section A-A

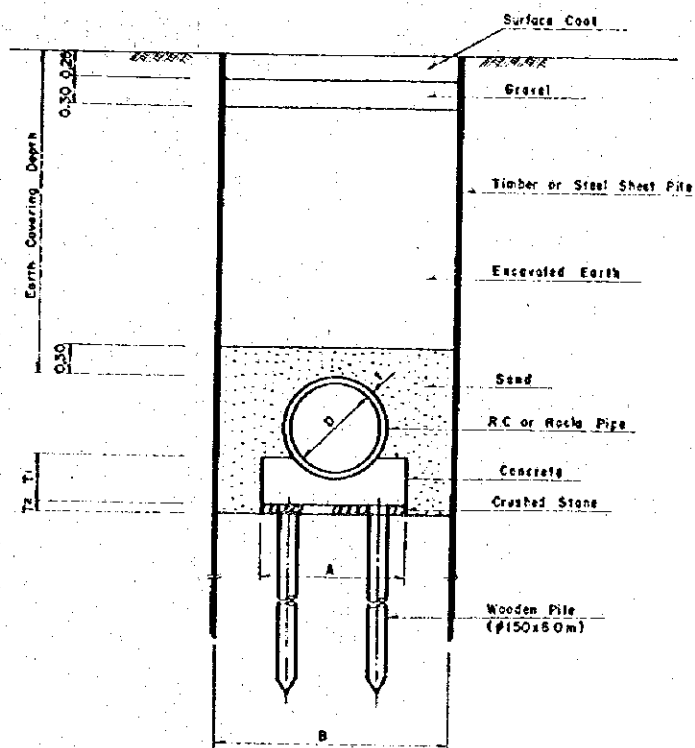


Section B-B



### Typical Concrete Pipe Bedding in Trench

non scale

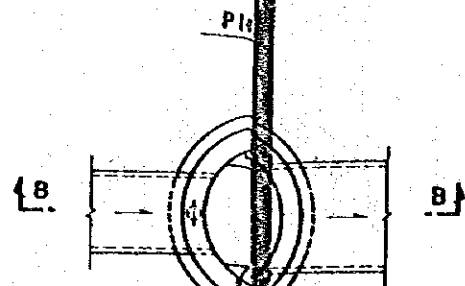


(unit: meter)

D	t	A	B	T <sub>1</sub>	T <sub>2</sub>
0.30	0.05	0.50	1.10	0.25	0.05
0.40	0.06	0.60	1.10	0.30	0.05
0.50	0.06	0.80	1.20	0.30	0.05
0.60	0.07	0.90	1.35	0.35	0.05
0.80	0.085	1.20	1.60	0.50	0.05
1.00	0.095	1.40	1.95	0.50	0.05
1.20	0.108	1.60	2.15	0.55	0.05
1.50	0.15	1.90	2.50	0.60	0.05

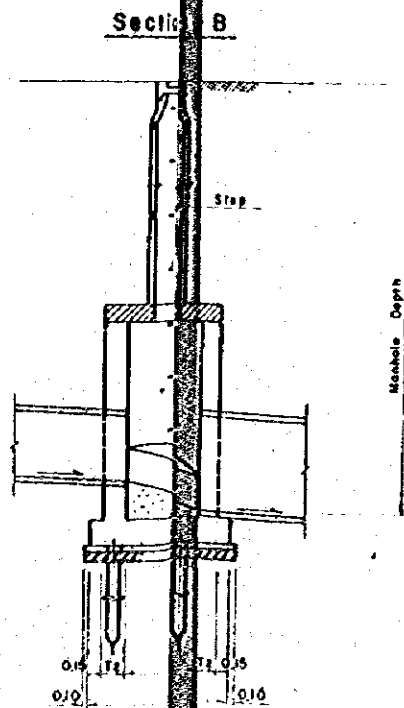
### Manhole Structure

non scale

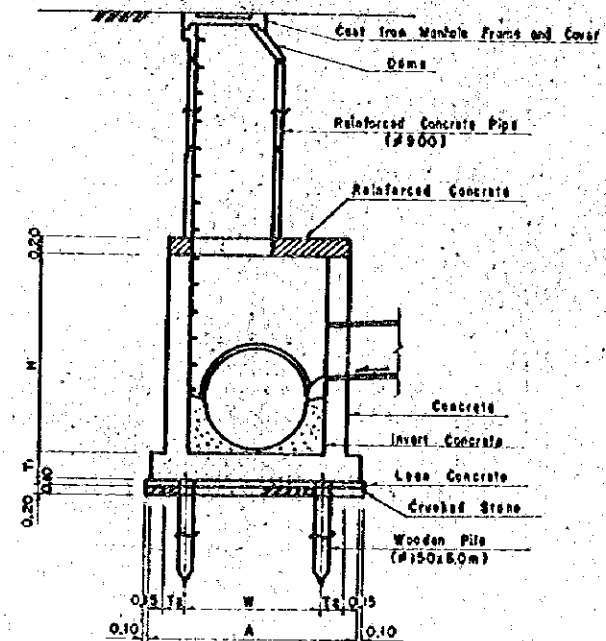


(unit: meter)

Type of Manhole	W	A	T <sub>1</sub>	T <sub>2</sub>
I	0.90	1.60	0.25	0.20
II	1.20	1.90	0.25	0.20
III	1.50	2.30	0.30	0.25
IV	1.80	2.60	0.30	0.25

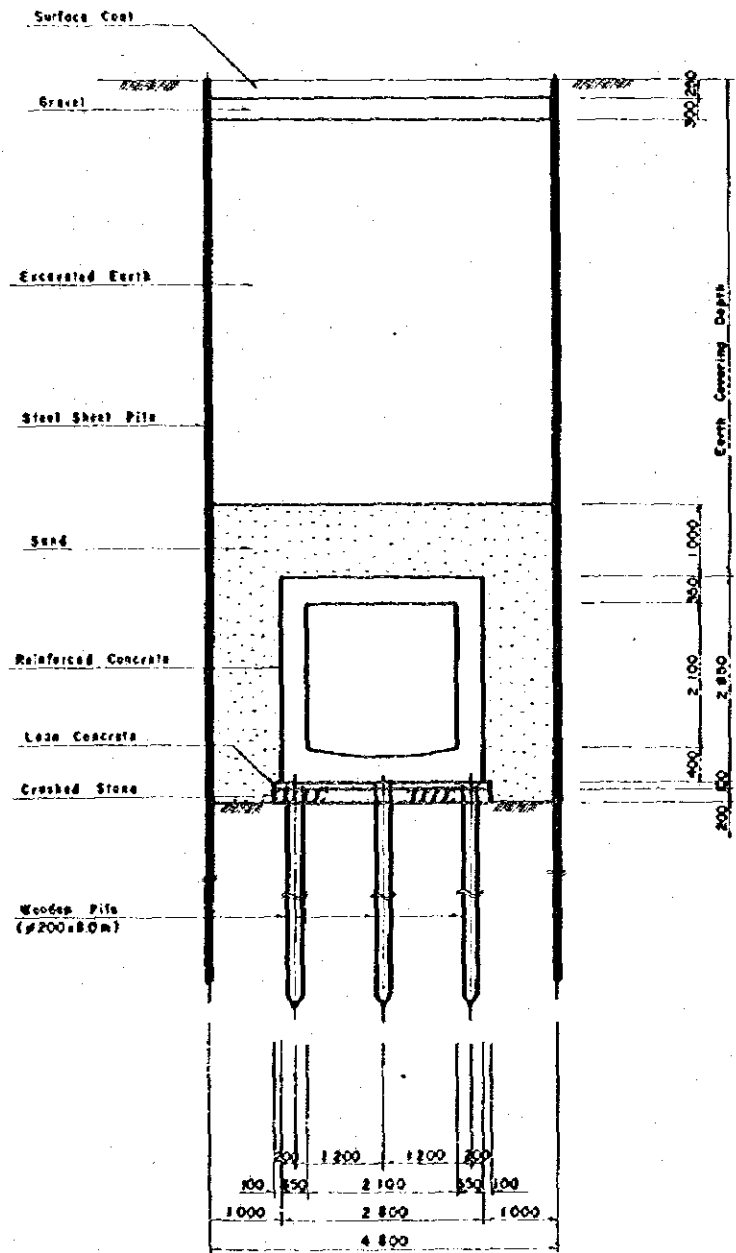


### Section A-A



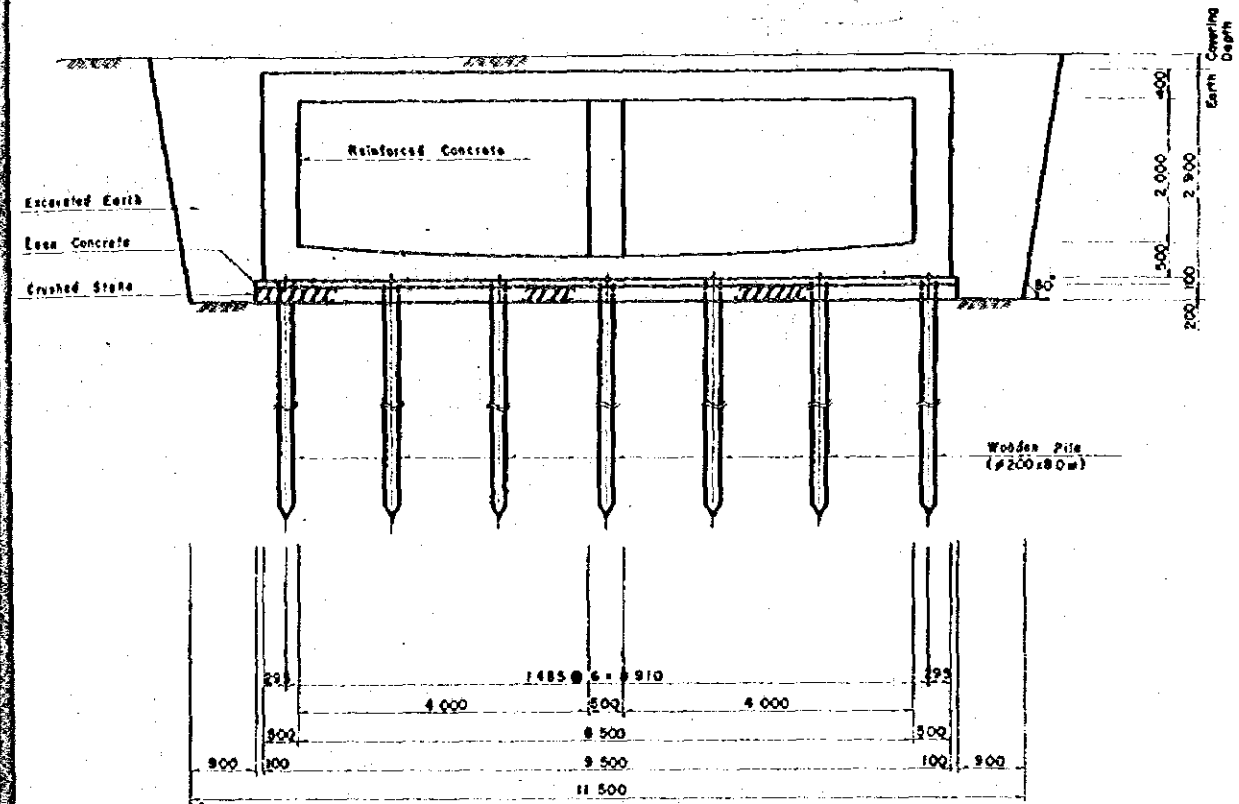
### TRUNK INTERCEPTING SEWER

S=1:50



### CHONG NONSI COMBINED SEWER

S=1:60



FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL  
COOPERATION AGENCY

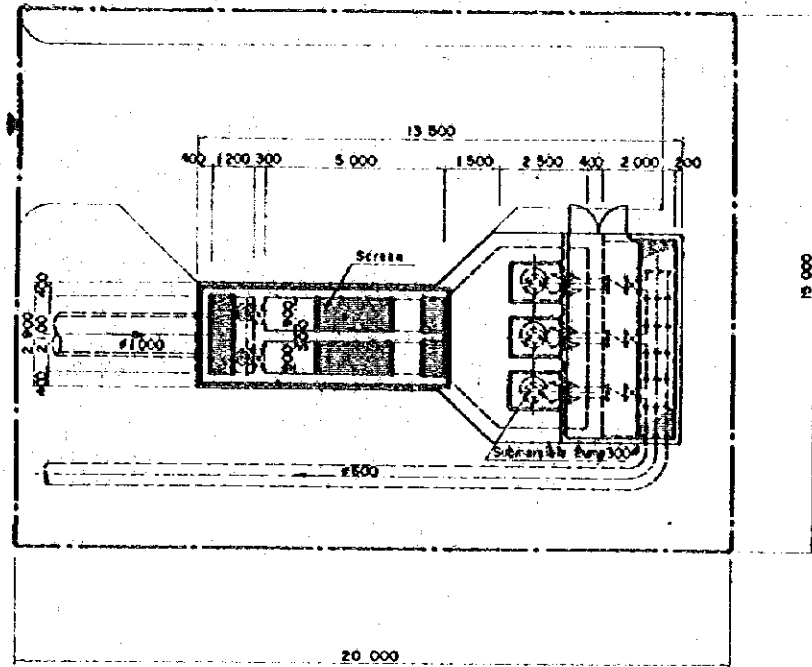
NIHON SUDO CONSULTANTS CO., LTD.  
TOKYO, JAPAN

TRUNK INTERCEPTOR & CHONG  
NONSI COMBINED SEWER

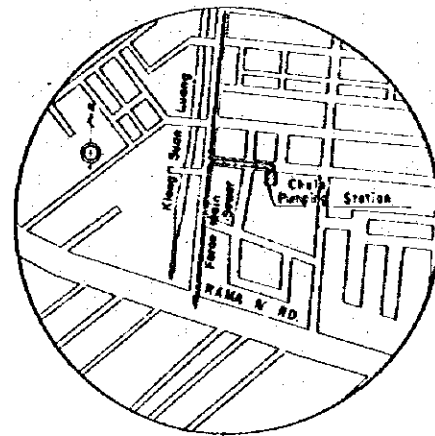
FIGURE  
10

# CHULA PUMPING STATION

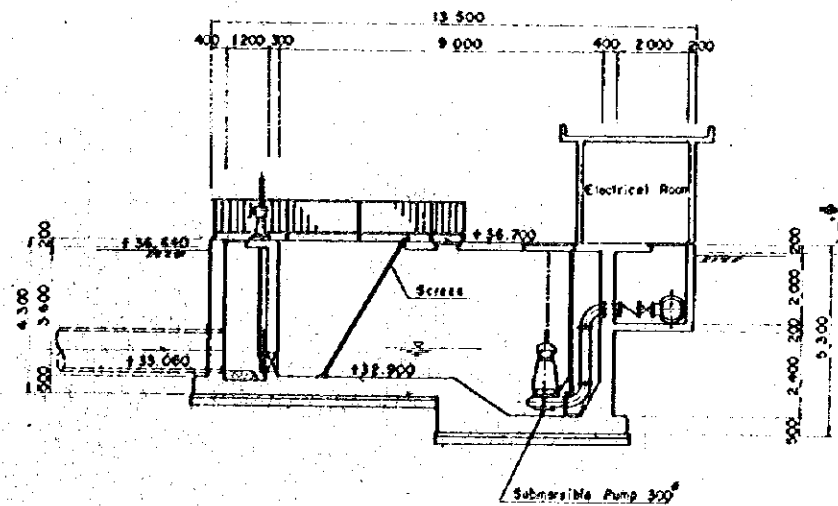
Plan  
S=1:100



Location of Chula Pumping Station

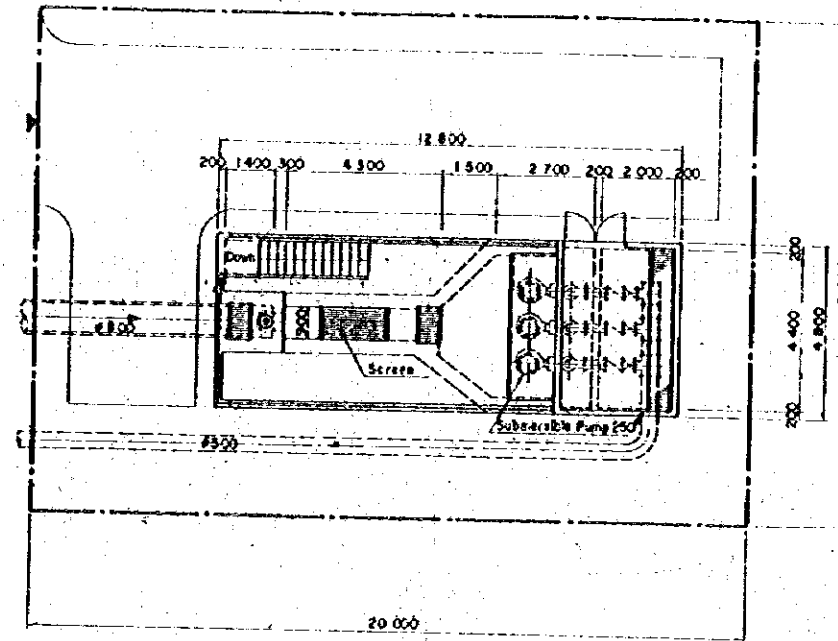


Section  
S=1:100

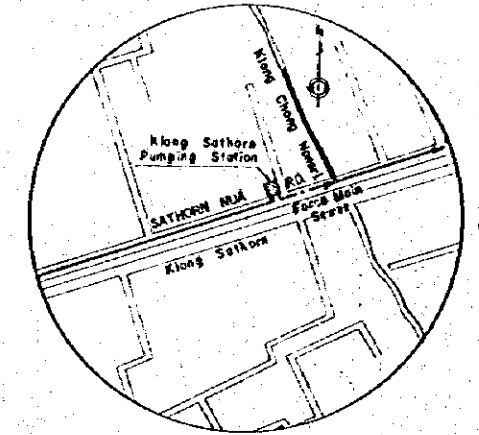


# KLONG SATHORN PUMPING STATION

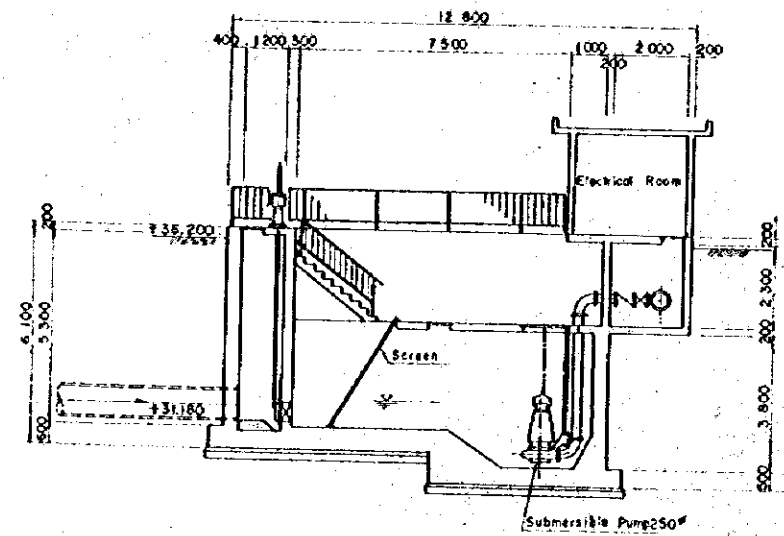
Plan  
S=1:100



Location of Klong Sathorn Pumping Station

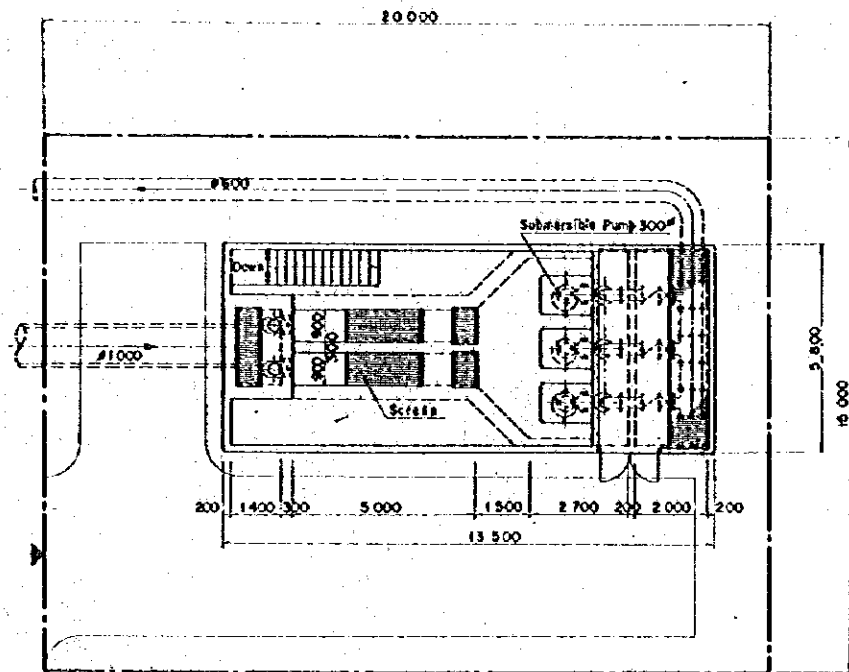


Section  
S=1:100

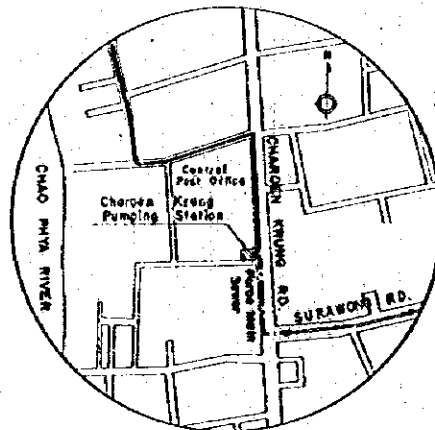


# CHAROEN KRUNG PUMPING STATION

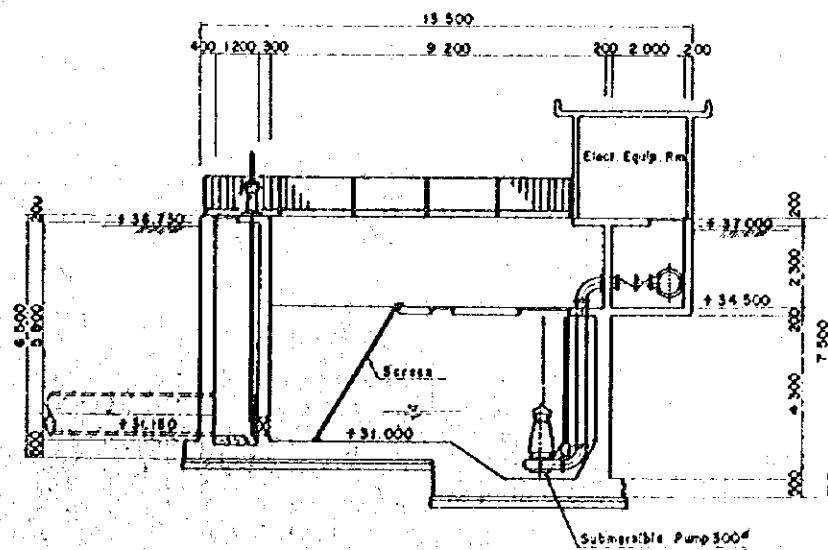
Plan  
S=1:100



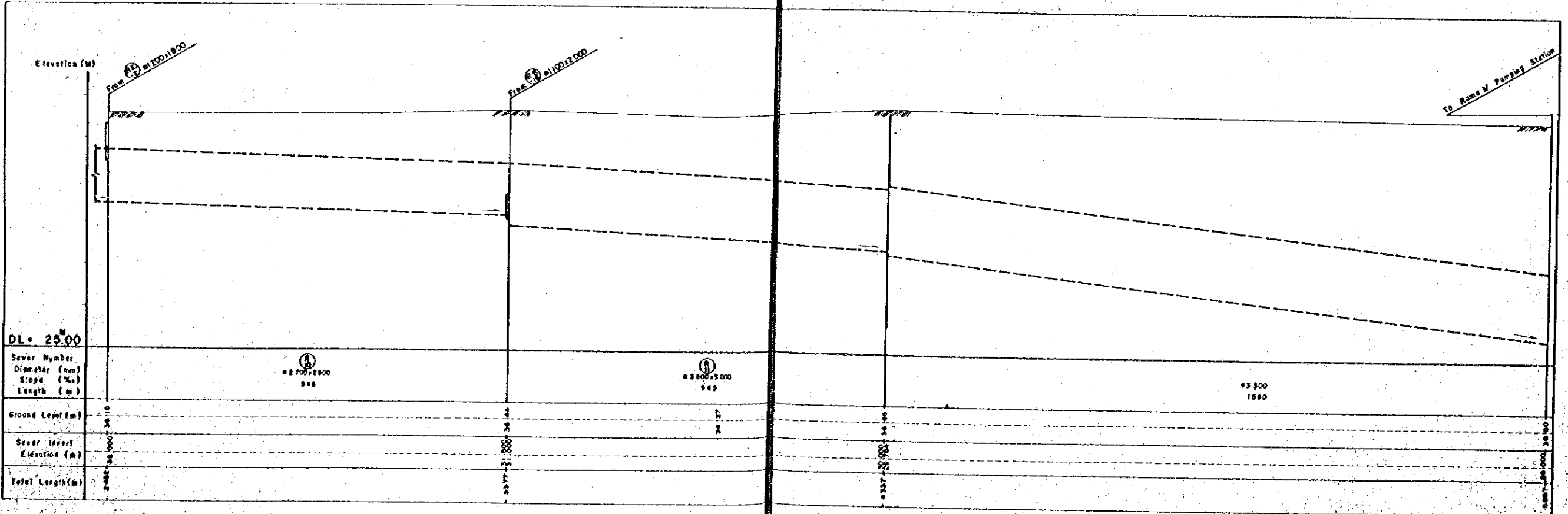
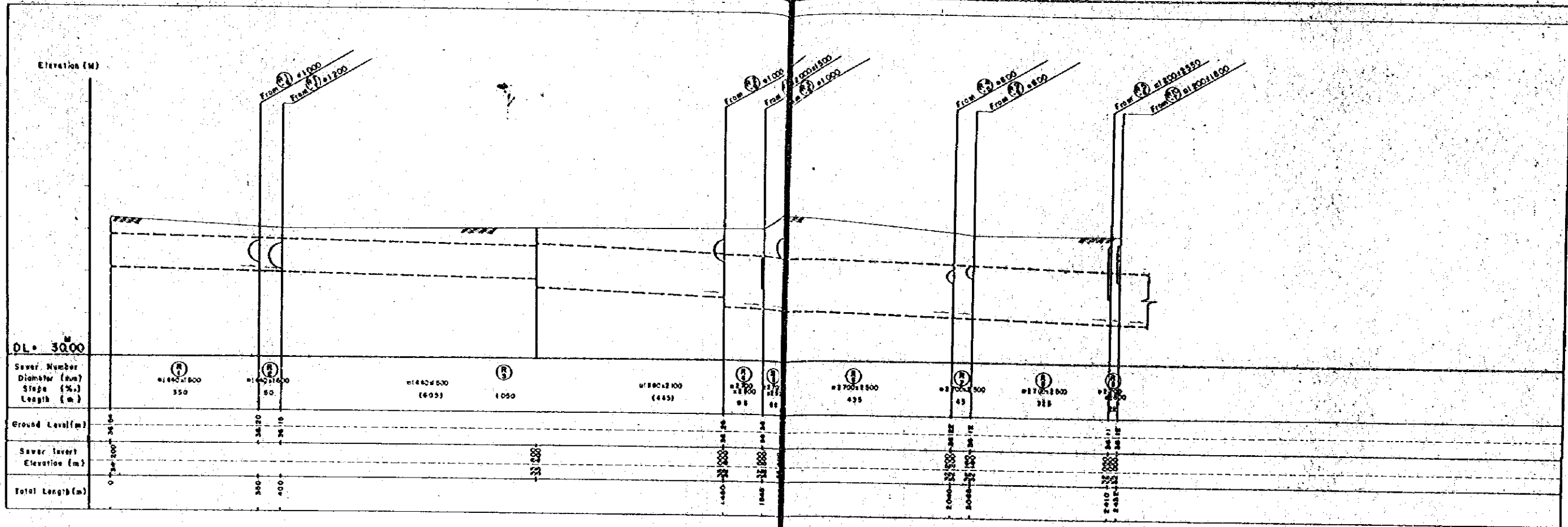
Location of Charoen Krung Pumping Station



Section  
S=1:100

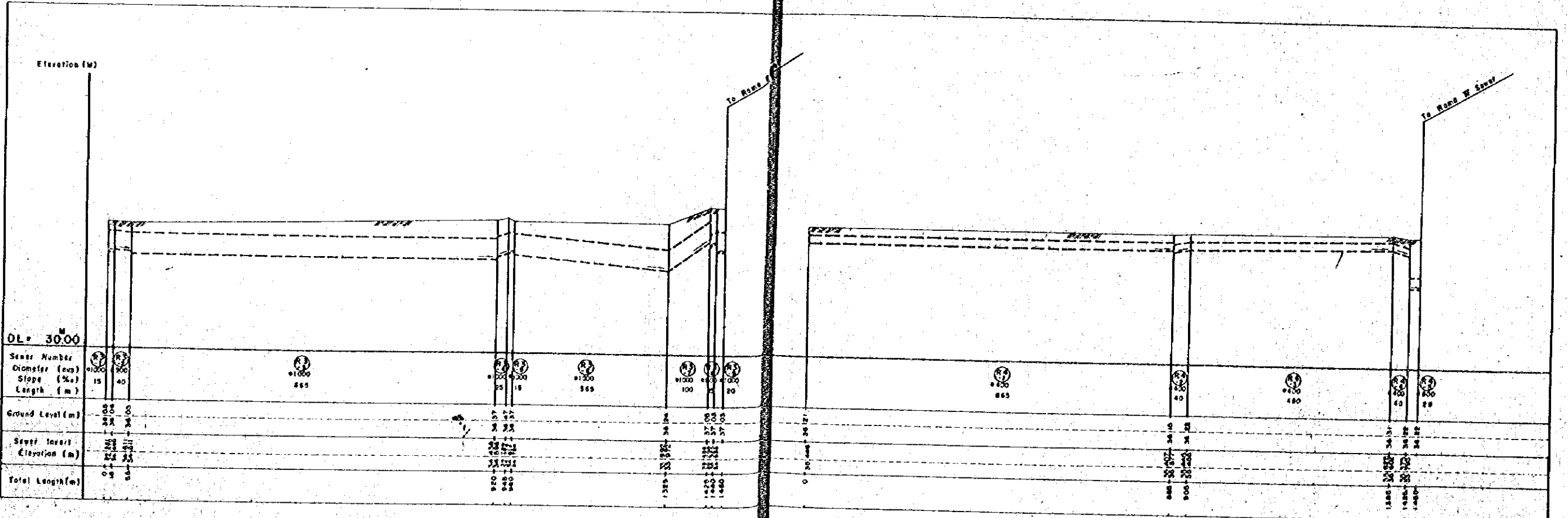
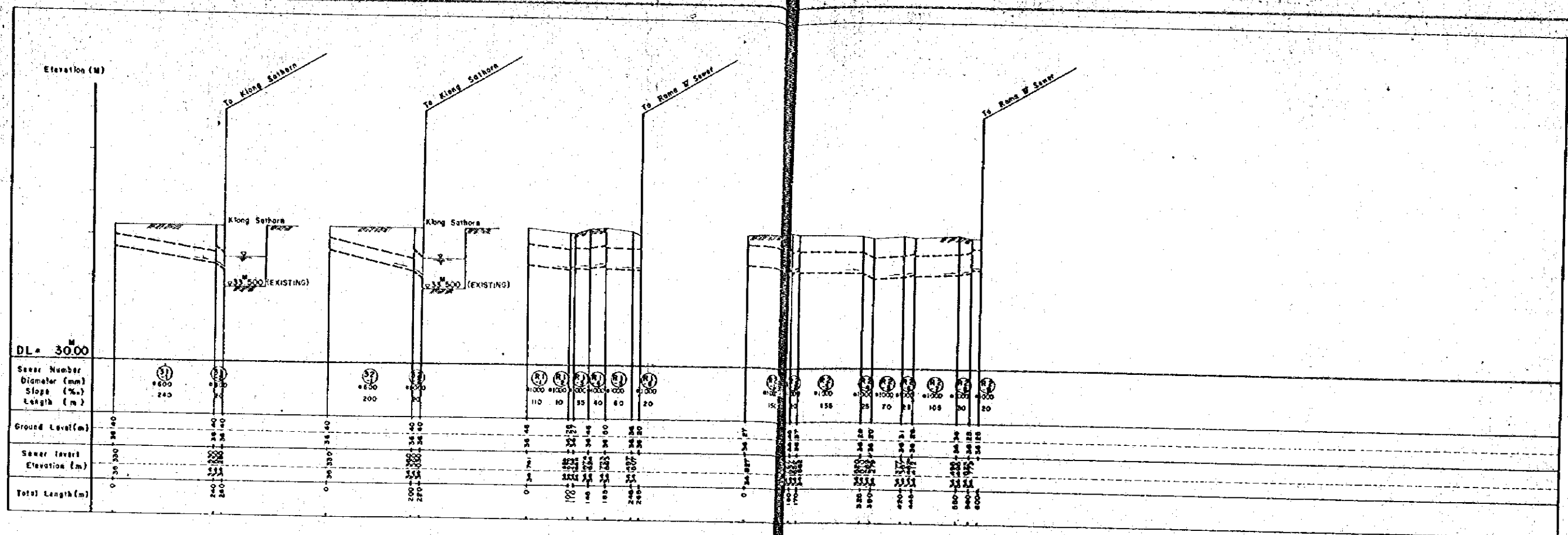


FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND		
JAPAN INTERNATIONAL COOPERATION AGENCY	NIHON KAIKO CONSULTANTS CO., LTD. TOKYO, JAPAN	
PLAN AND SECTION OF CHAROEN KRUNG PUMPING STATION	FIGURE	12



SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 NIPPON SEIDO CONSULTANTS CO., LTD. TOKYO, JAPAN  
 PROFILE OF EXISTING SEWERS  
 FIGURE 13



SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

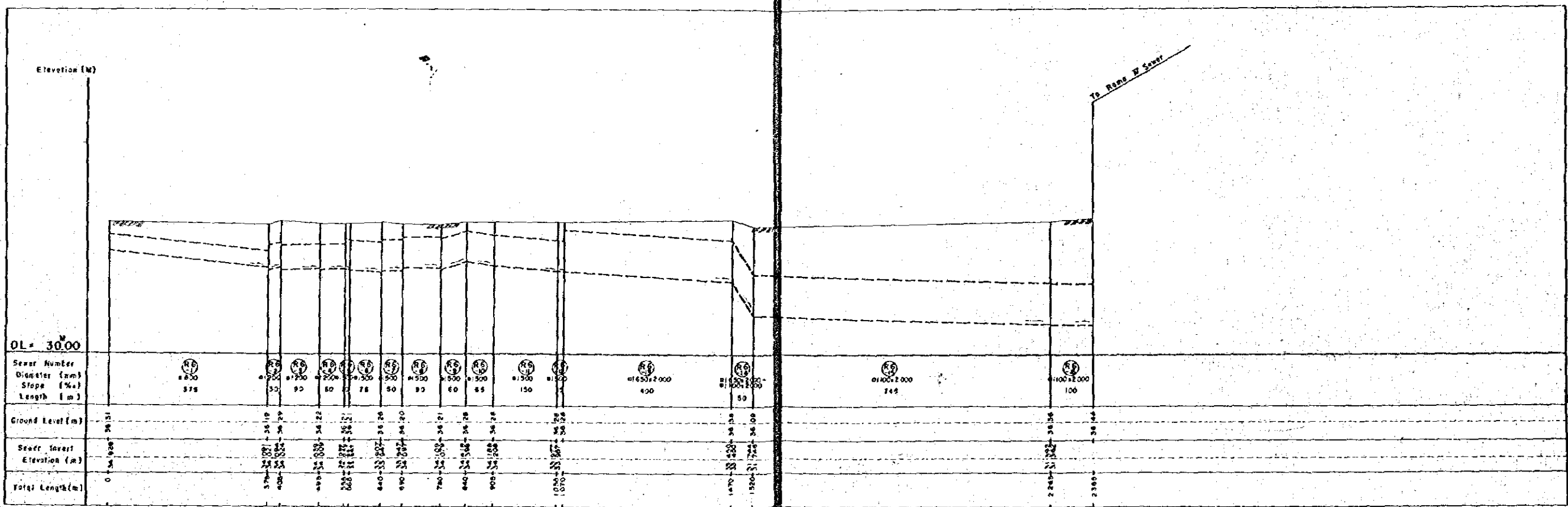
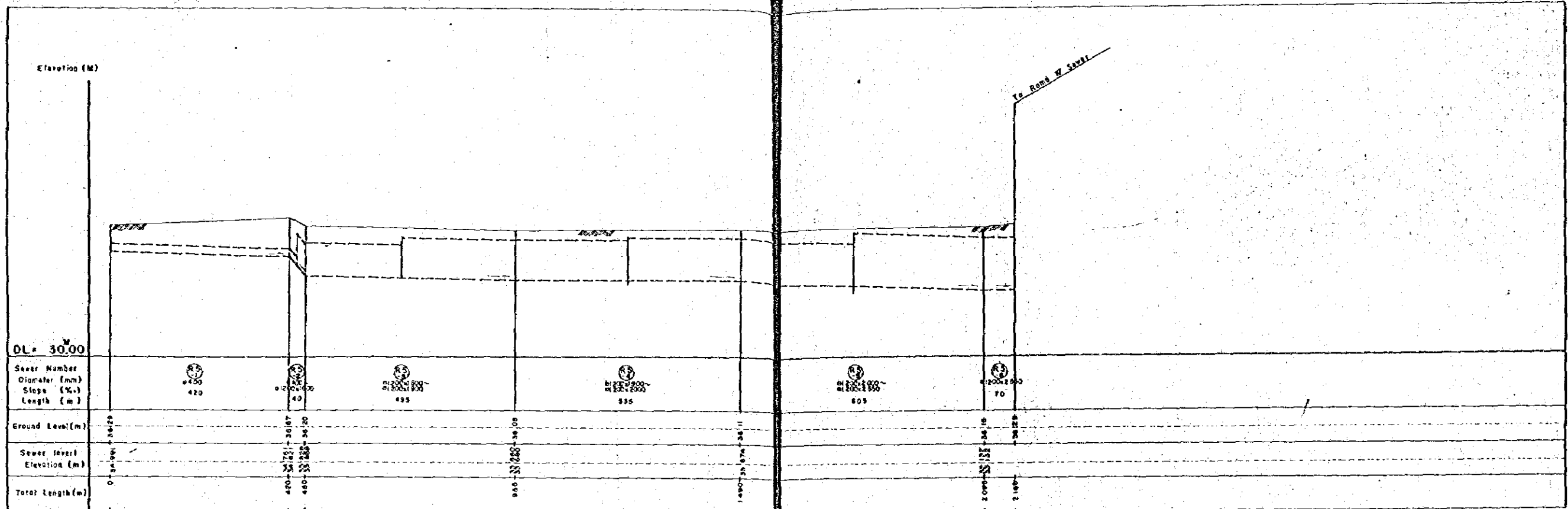
FEASIBILITY STUDY FOR BANGKOK  
 SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
 IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY  
 NIKKEN SEIDO CONSULTANTS CO., LTD.  
 TOKYO, JAPAN

PROFILE OF EXISTING SEWERS

FIGURE 14





SCALE

HORIZONTAL 1: 5,000

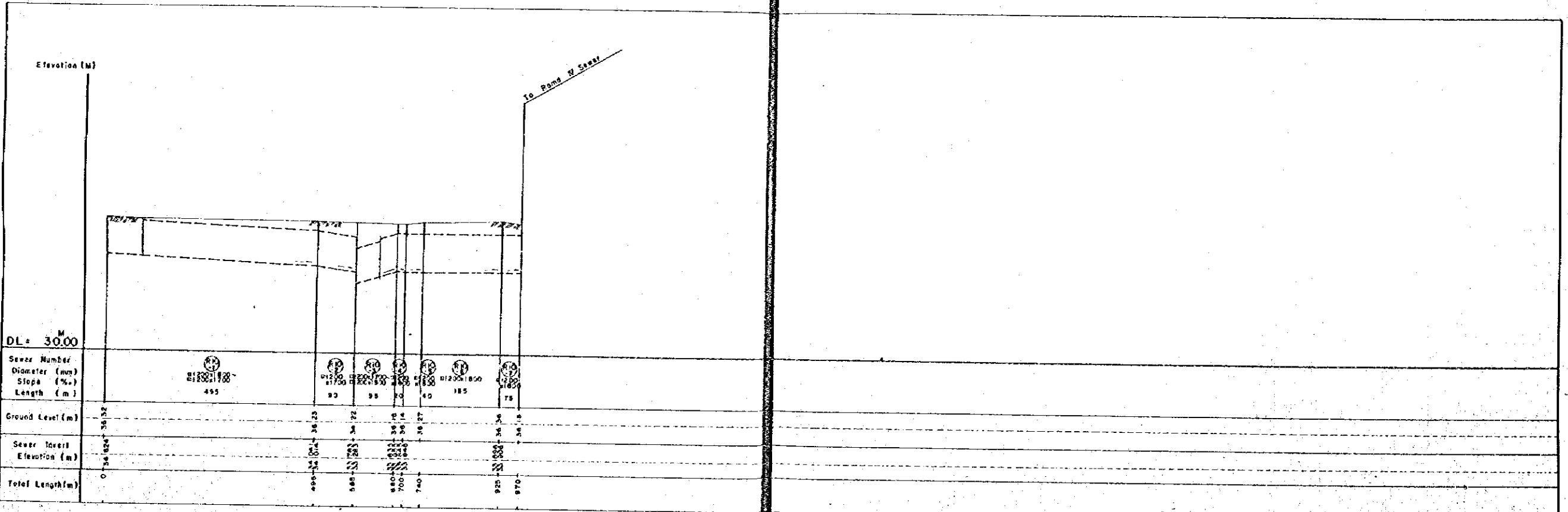
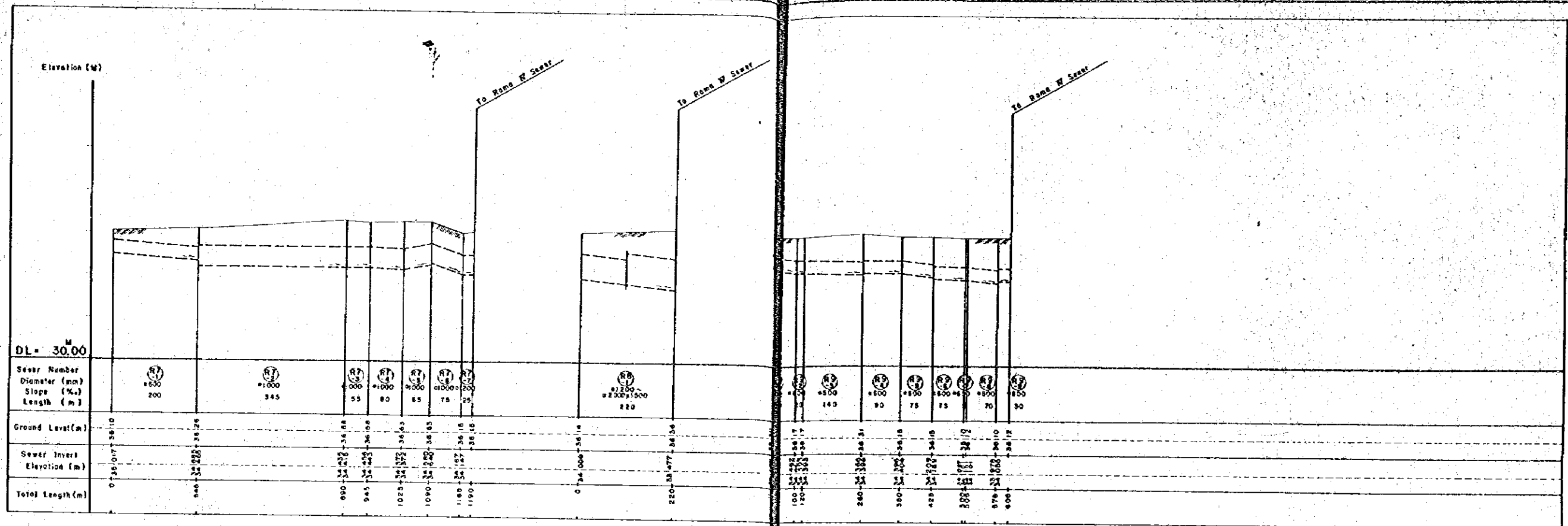
VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY NIKKEN SUDO CONSULTANTS CO., LTD. TOKYO, JAPAN

PROFILE OF EXISTING SEWERS

FIGURE 15



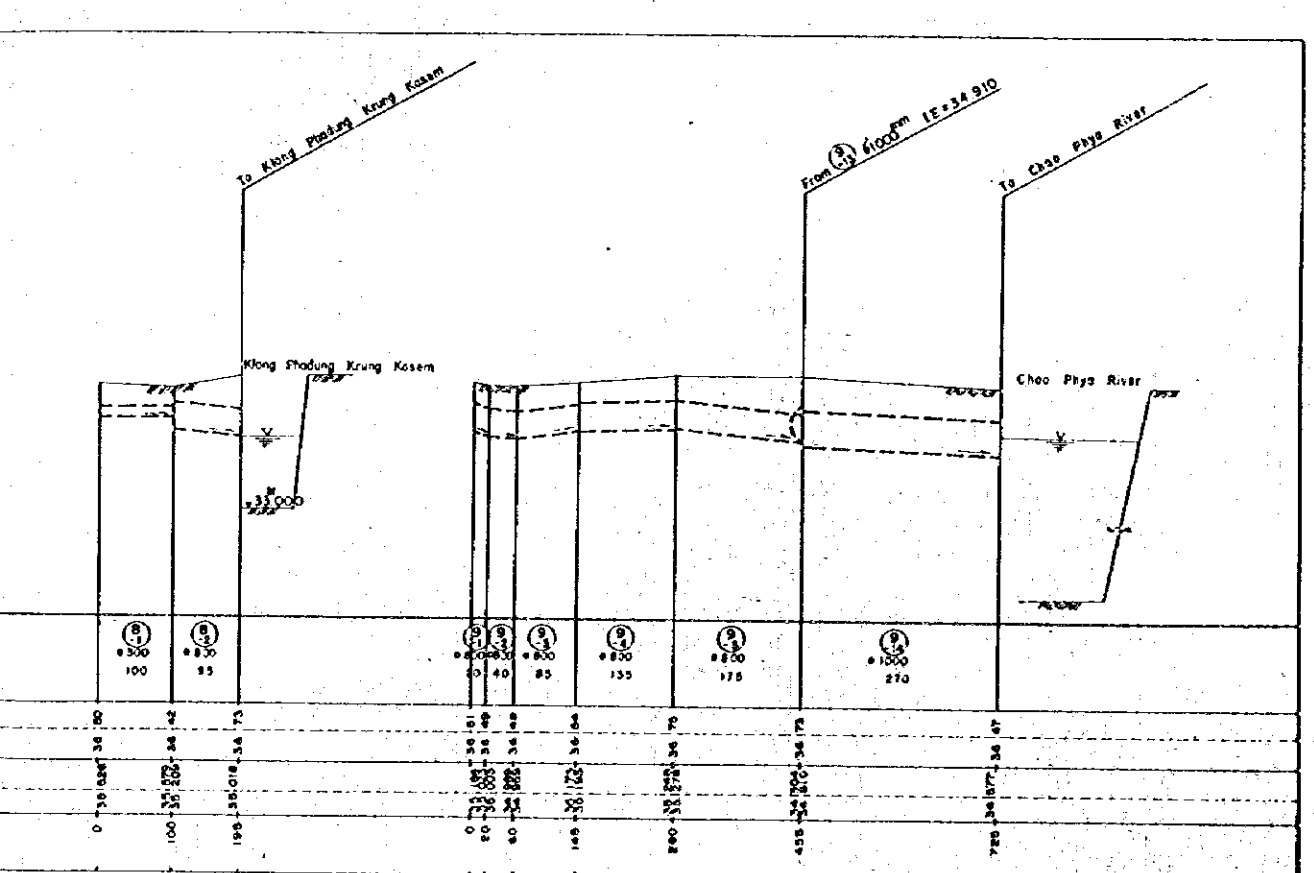
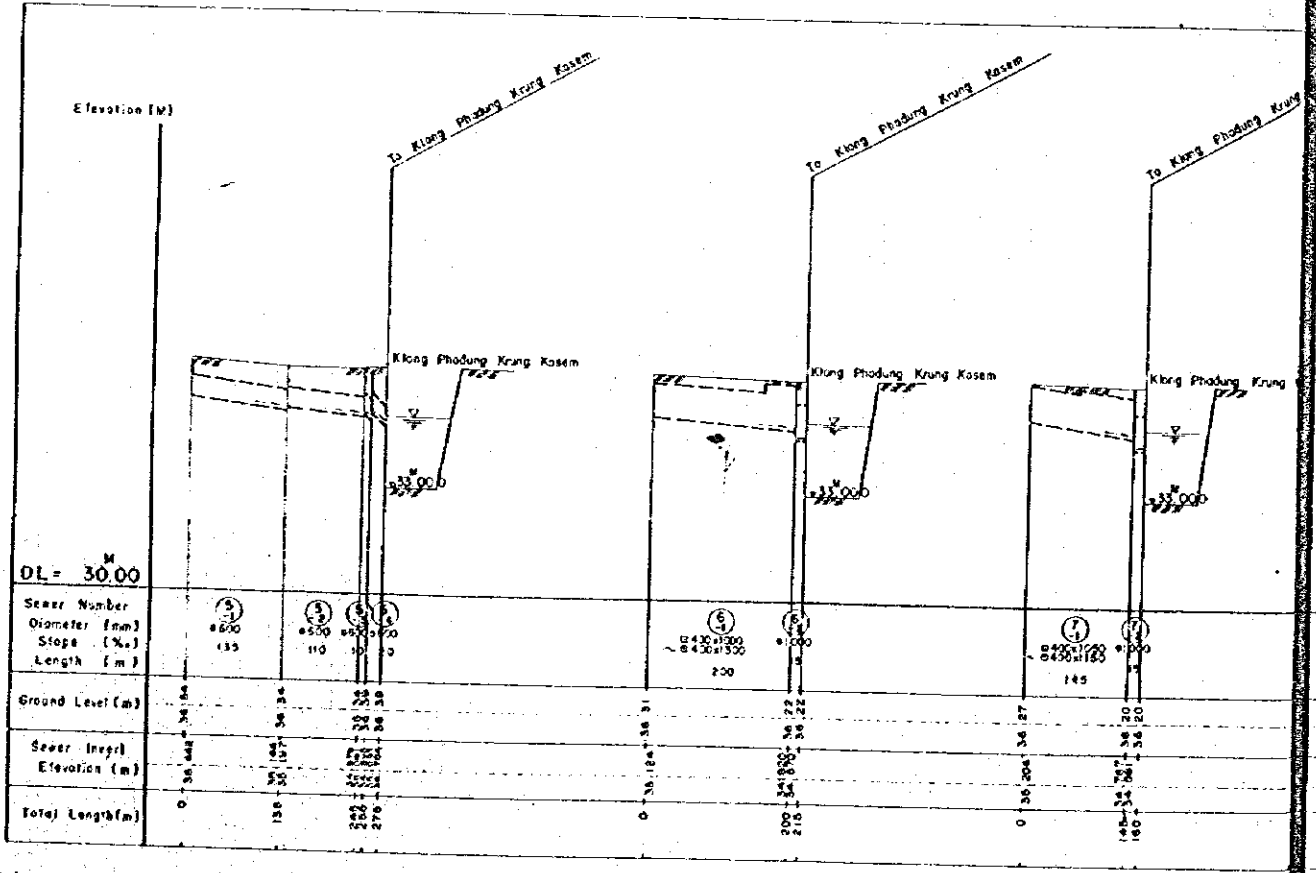
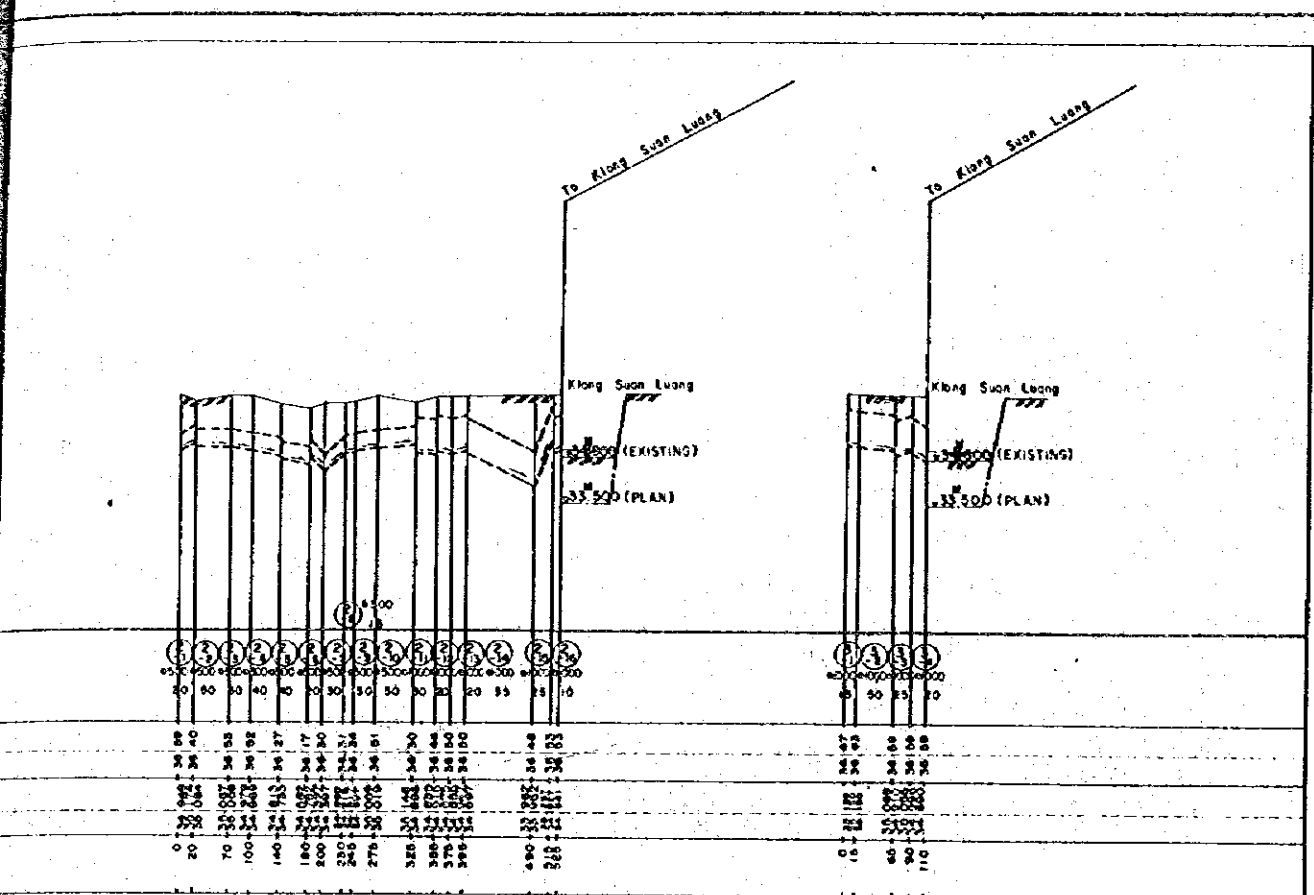
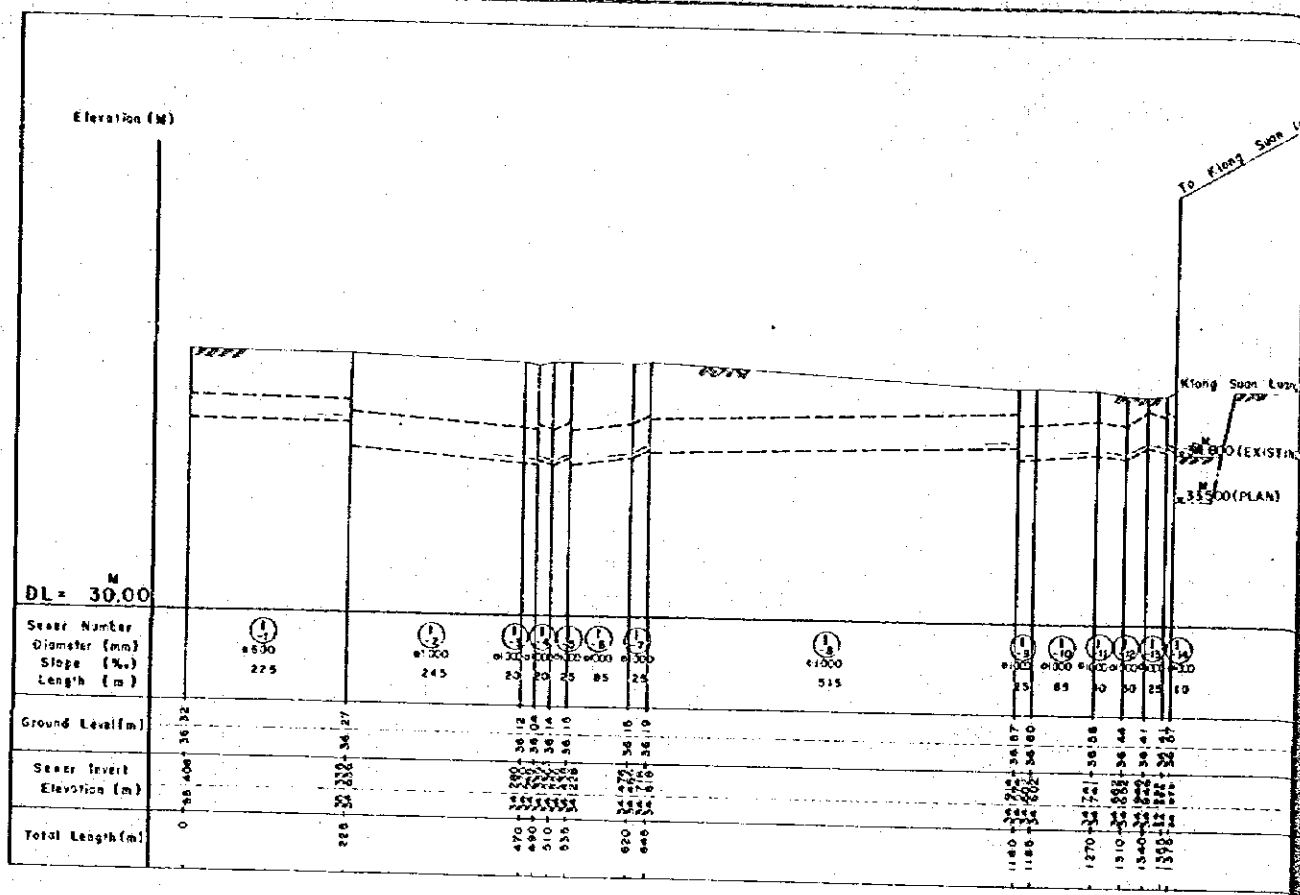
SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK  
 SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
 IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY  
 NIPPON KAIEN KAISHA LTD.  
 TOKYO, JAPAN

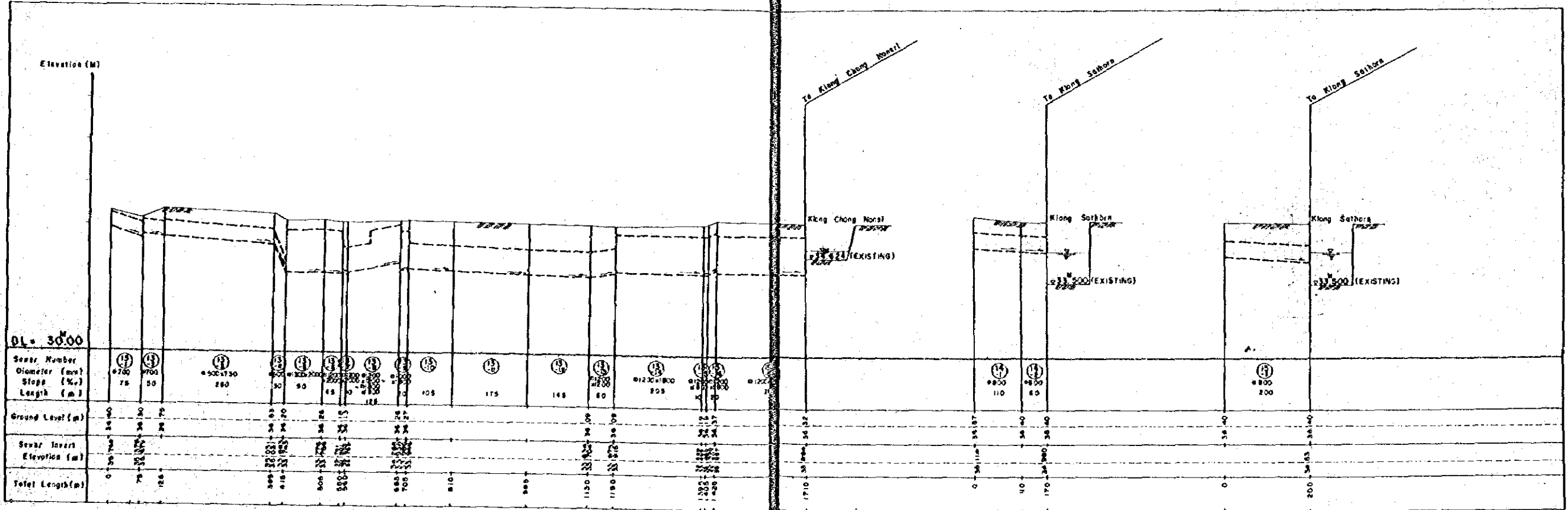
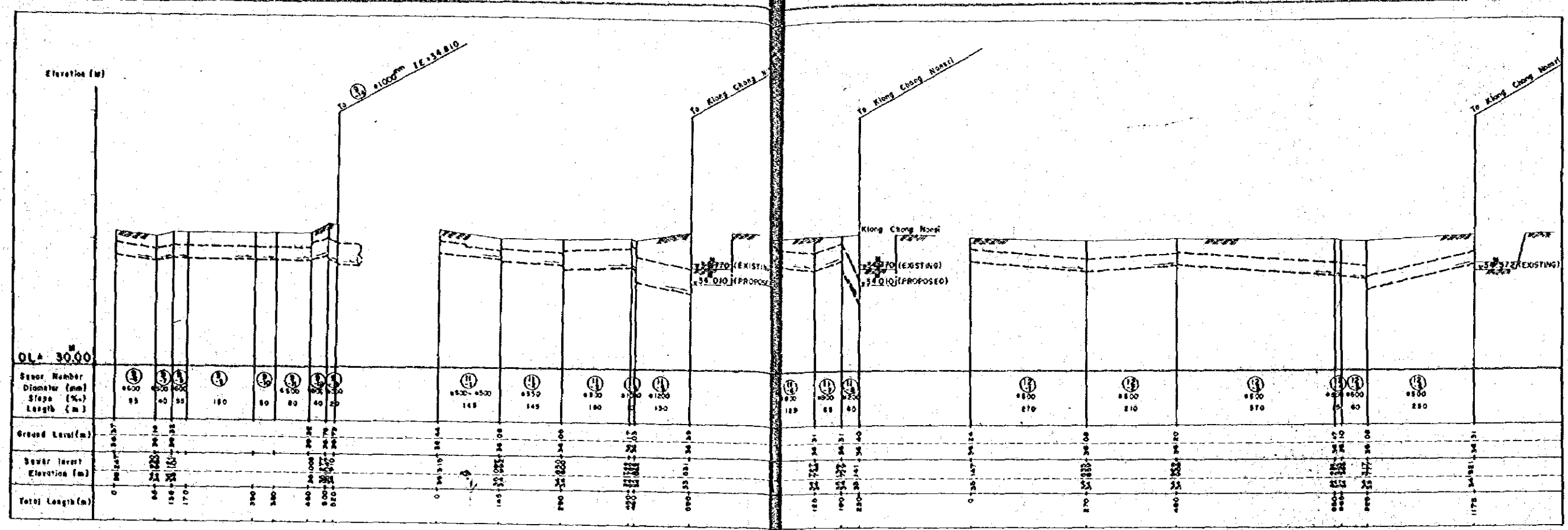
PROFILE OF EXISTING SEWERS

FIGURE 16



SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK  
 SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
 IN KINGDOM OF THAILAND  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 NIPPON SUDO CONSULTANTS (CO.) LTD.  
 TOKYO, JAPAN  
 PROFILE OF EXISTING SEWERS  
 FIGURE 17

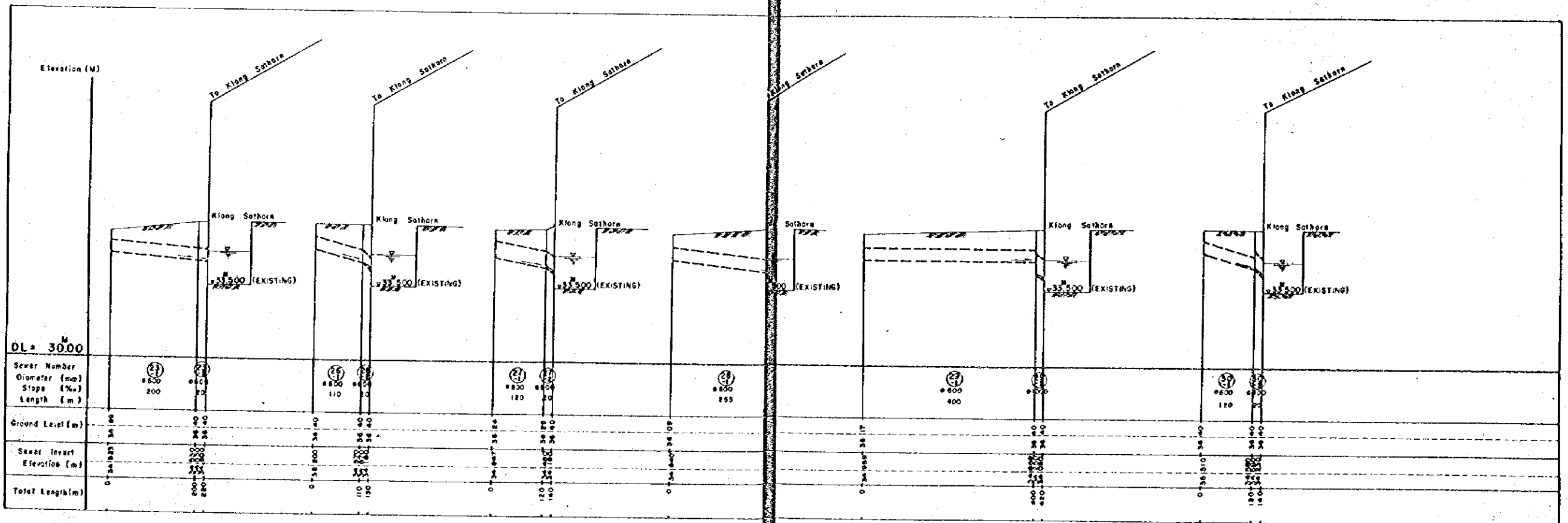
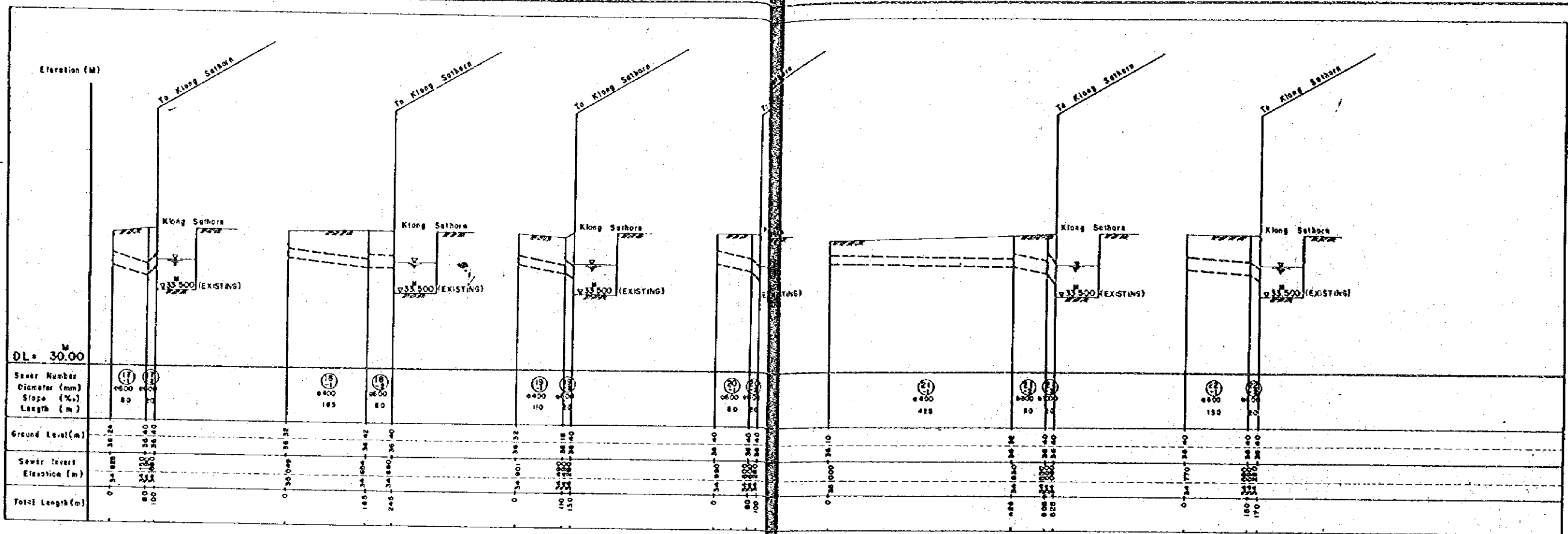


SCALE  
 HORIZONTAL 1: 5,000  
 VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK  
 SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
 IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY  
 NIHON SUDO CONSULTANTS CO., LTD  
 TOKYO, JAPAN

PROFILE OF EXISTING SEWERS  
 FIGURE 18



SCALE  
HORIZONTAL 1: 5,000  
VERTICAL 1: 100

FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

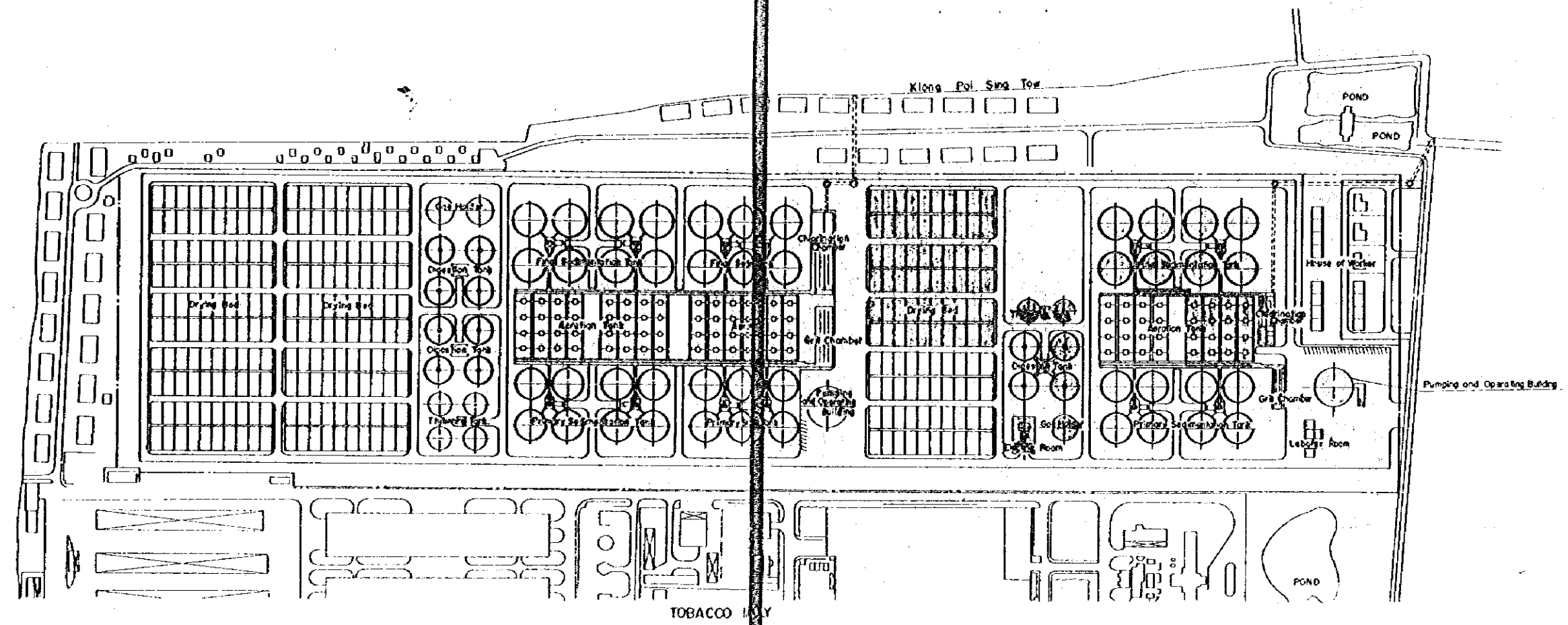
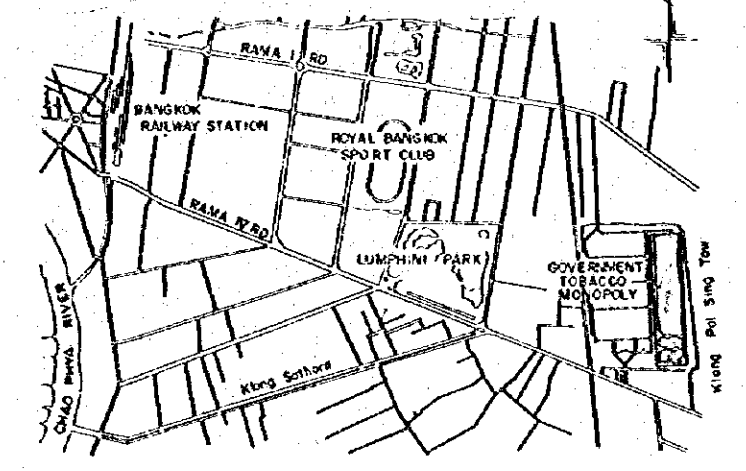
JAPAN INTERNATIONAL COOPERATION AGENCY  
NIPPON SUDO CONSULTANTS CO., LTD.  
TOKYO, JAPAN

PROFILE OF EXISTING SEWERS  
FIGURE 19



Treatment Plant 5:1=2000

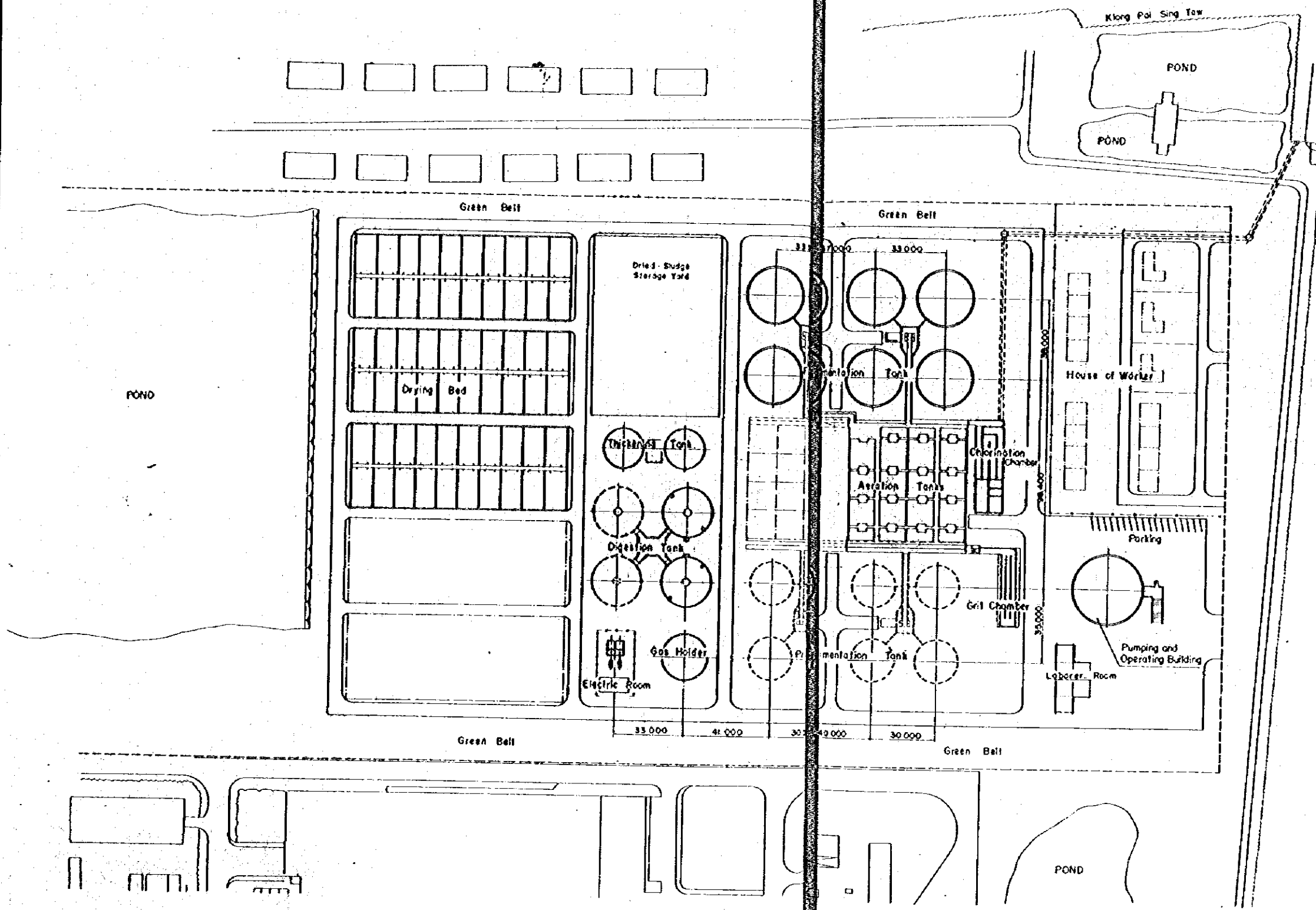
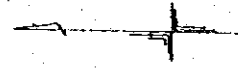
Location of Treatment Plant



LEGEND  
□ : First Stage

FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND	
JAPAN INTERNATIONAL COOPERATION AGENCY	KHON SUKHO CONSULTANTS CO., LTD. TOKYO, JAPAN
TREATMENT PLANT, LAYOUT PLAN-1	FIGURE 20

General Plan of Treatment Plant 1:1000

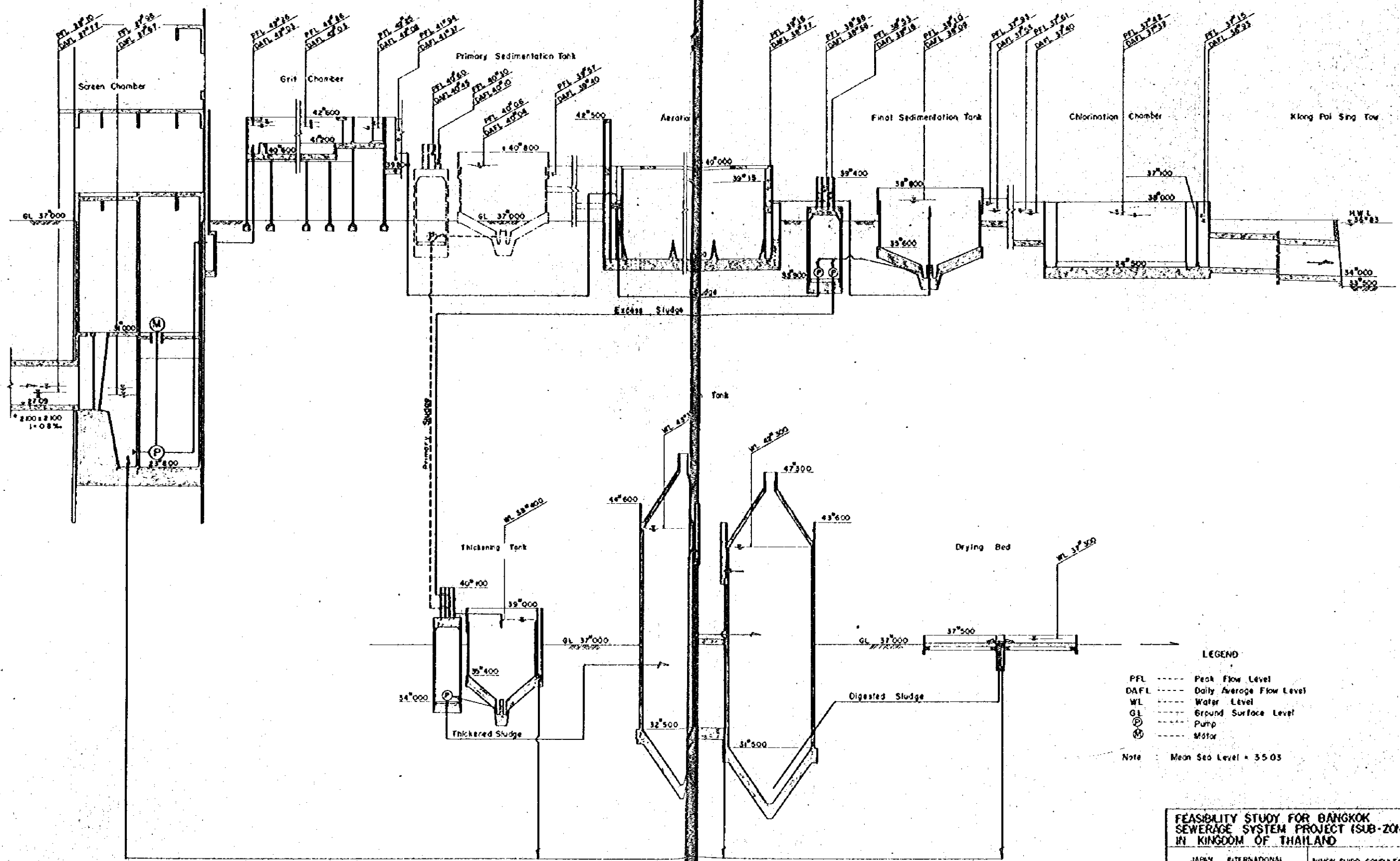


**LEGEND**  
 — First Stage  
 - - - Future Plan

FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND		
JAPAN INTERNATIONAL COOPERATION AGENCY	NIXON SUDDO CONSULTANTS CO., LTD. TOKYO, JAPAN	
TREATMENT PLANT, LAYOUT PLAN- 2	FIGURE	21

Hydraulic Profile of The Treatment Plant

S = H:V = 1:500  
V = 1:100



**LEGEND**

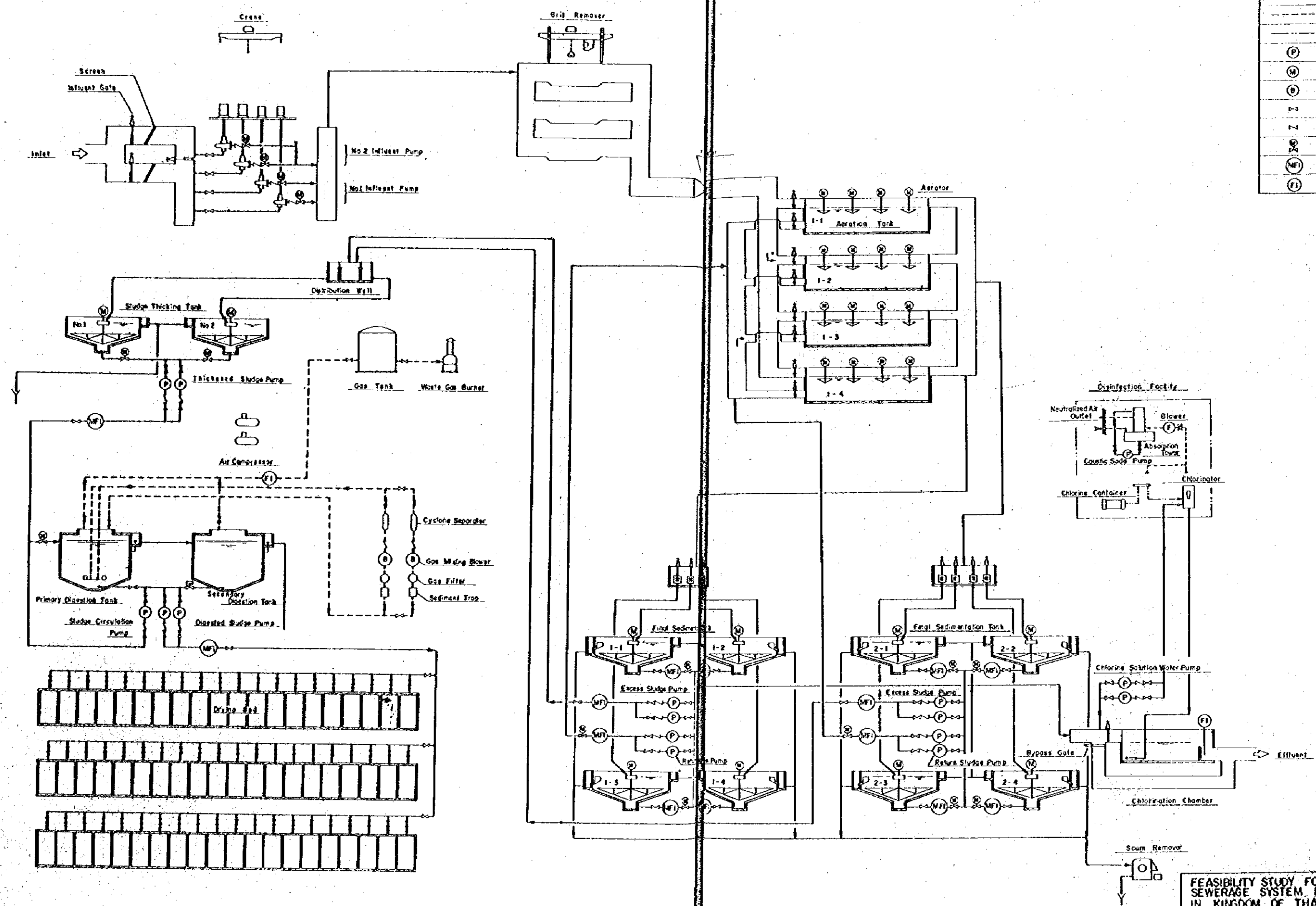
PFL ----- Peak Flow Level  
 DAFL ----- Daily Average Flow Level  
 WL ----- Water Level  
 GL ----- Ground Surface Level  
 P ----- Pump  
 M ----- Motor

Note : Mean Sea Level = 35.03



Legend

Mark	Name
—	Waste Water Pipe - Sludge Pipe
- - - -	Air Pipe - Gas Pipe
- · - · -	Chlorine Gas Pipe
(P)	Pump
(M)	Motor
(B)	Blower
— —	Manual Sluice Valve
— /—	Check Valve
(M) — —	Motor Drive Sluice Valve
(MF)	Magnetic Flow Meter
(FI)	Flow Meter

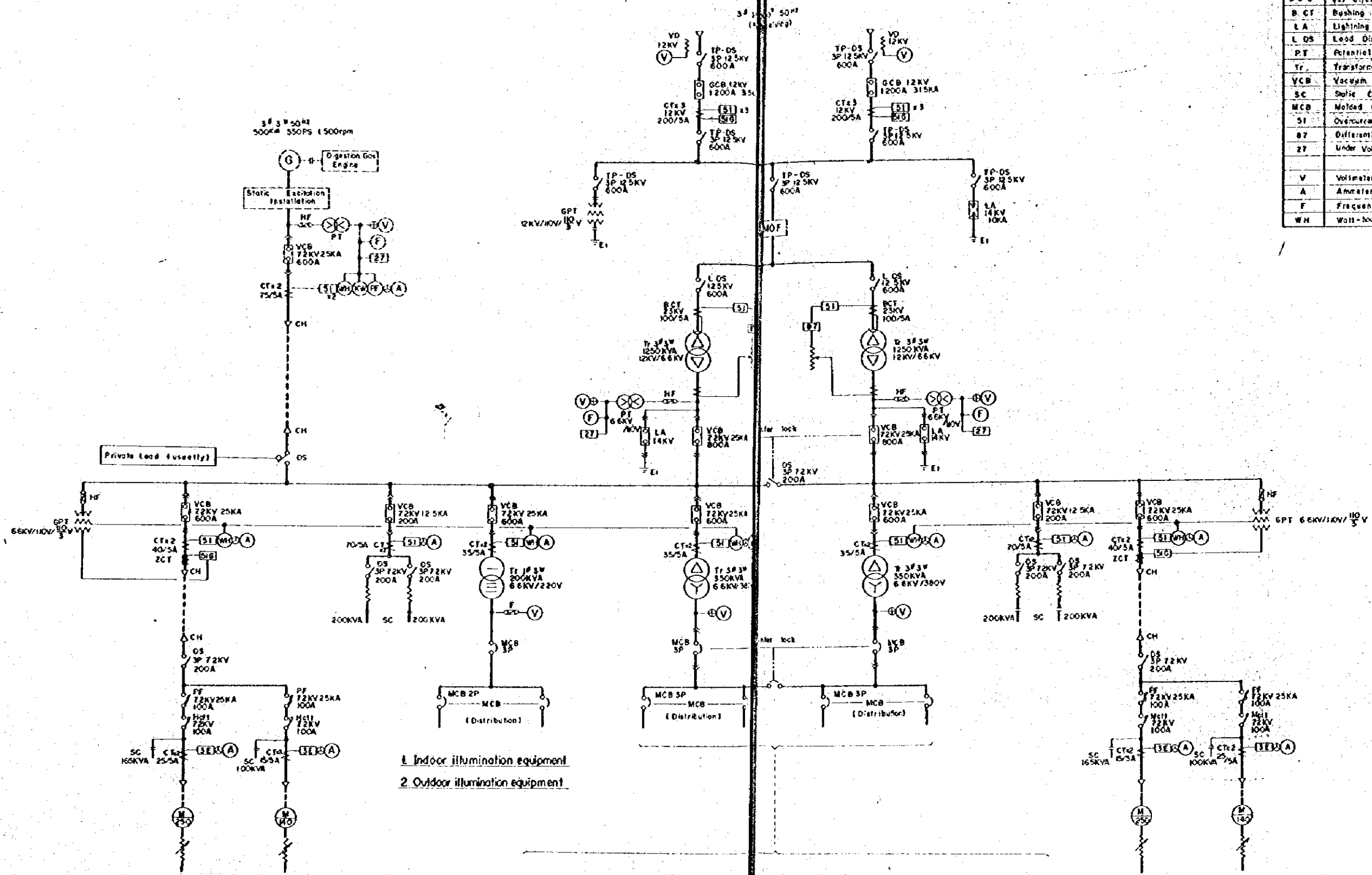


FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM, PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY | NIPPON KAIKO CONSULTANTS CO., LTD. TOKYO, JAPAN

FLOW DIAGRAM | FIGURE 23

Mark	Name
VD	Voltage Detector
TP-DS	Disconnecting Switch
GCB	Gas Circuit Breaker
BCT	Bushing Type Current Transformer
LA	Lightning Arrester
LDS	Lead Disconnecting Switch
PT	Potential Transformer
Tr	Transformer
VCB	Vacuum Circuit Breaker
SC	Shunt Capacitor
MCB	Molded Case Circuit Breaker
SI	Overcurrent Relay
SD	Differential Relay
UV	Under Voltage Relay
V	Voltmeter
A	Ammeter
F	Frequency Meter
WH	Watt-hour Meter



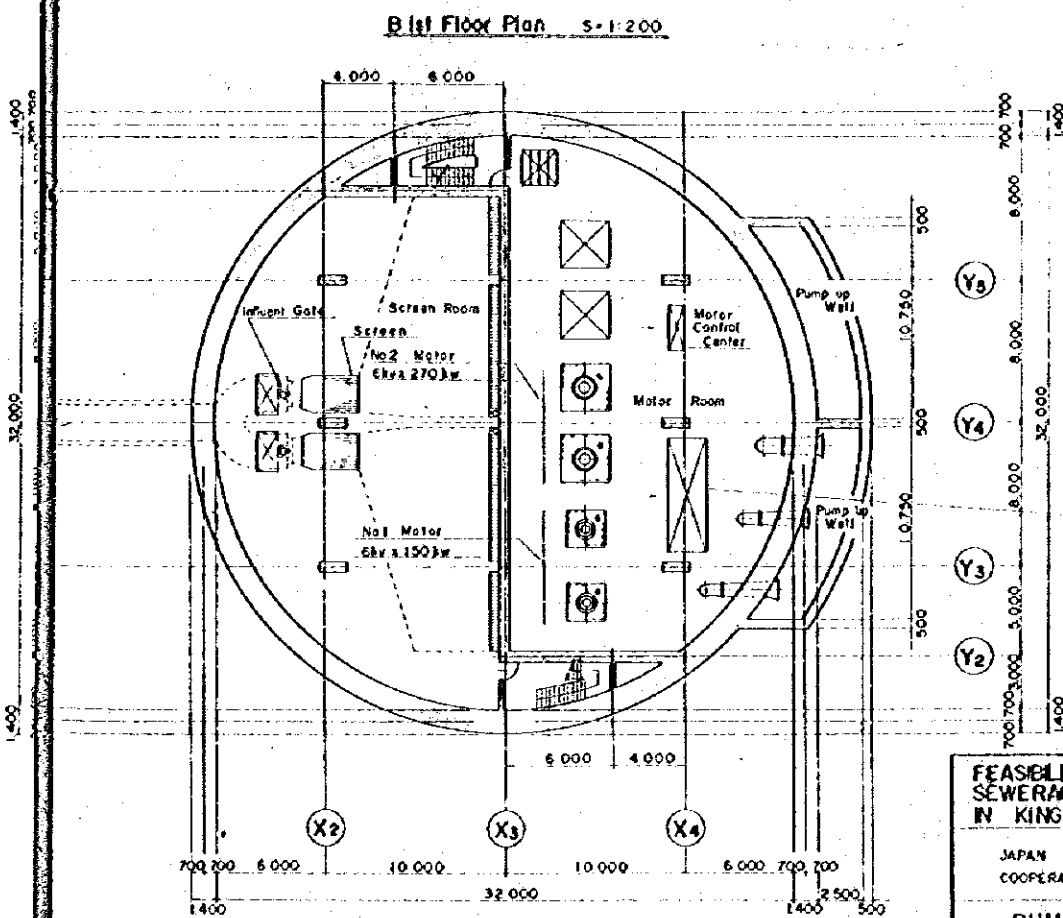
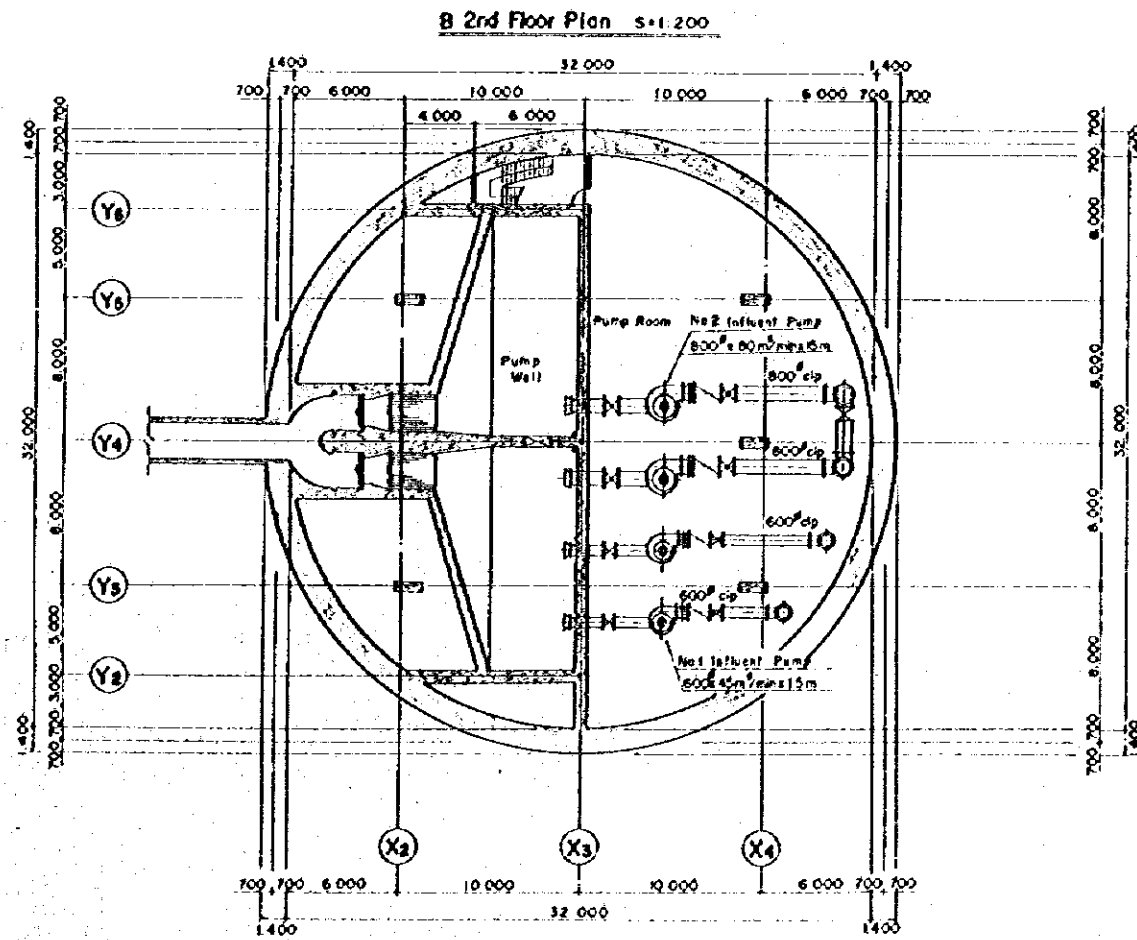
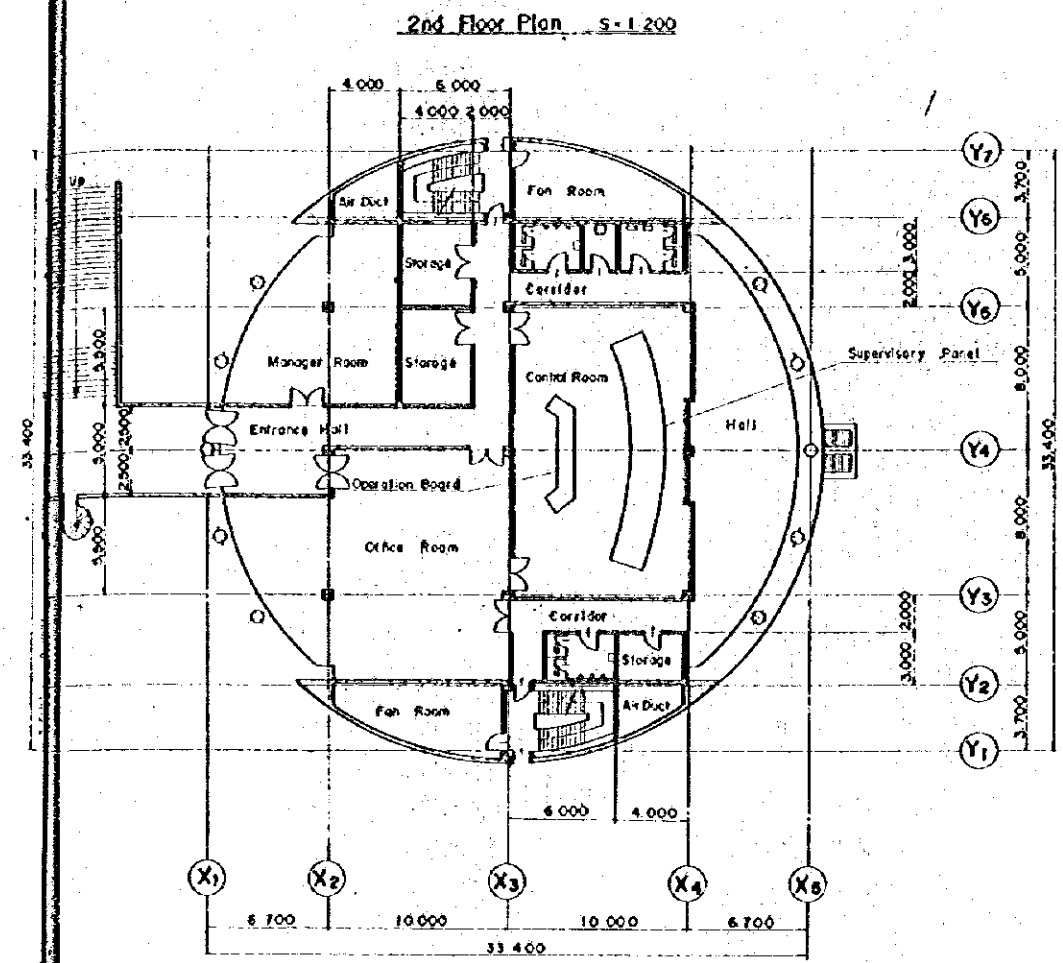
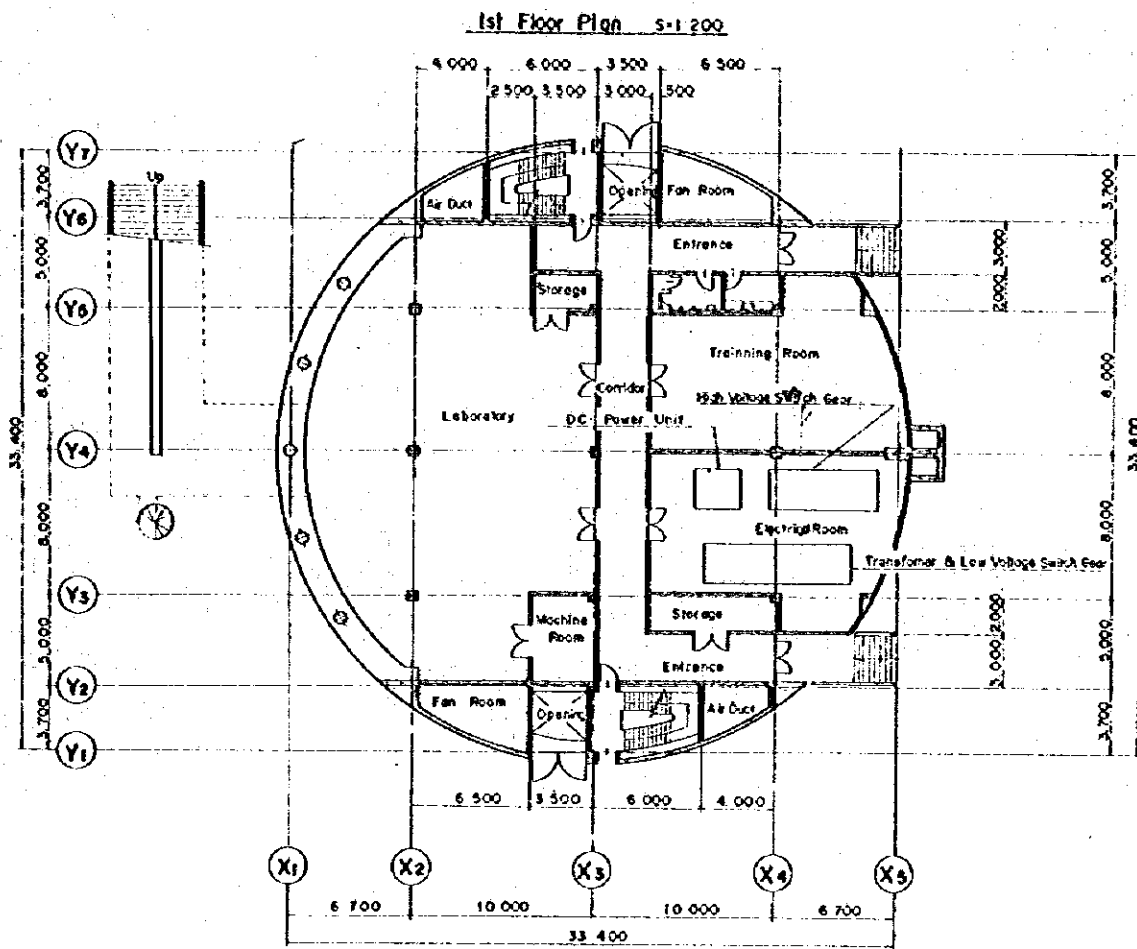
- 1. Indoor illumination equipment
- 2. Outdoor illumination equipment

Control Center	Equipment Name	Capacity	Control Center	Equipment Name	Load Capacity
C/C - 1	Influent Pump Equipment	KW	C/C - 5	Fine Settling Tank Equipment	60KW
C/C - 2	Grit Chamber Equipment	KW	C/C - 6	Digestion Equipment	25KW
C/C - 4	Aeration Tank Equipment	KW	C/C - 7	Sludge Thickening Digestion Equipment	30KW

**FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND**

JAPAN INTERNATIONAL COOPERATION AGENCY	NEON SUIDO CONSULTANTS CO., LTD TOKYO, JAPAN
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SINGLE LINE DIAGRAM FIGURE 24



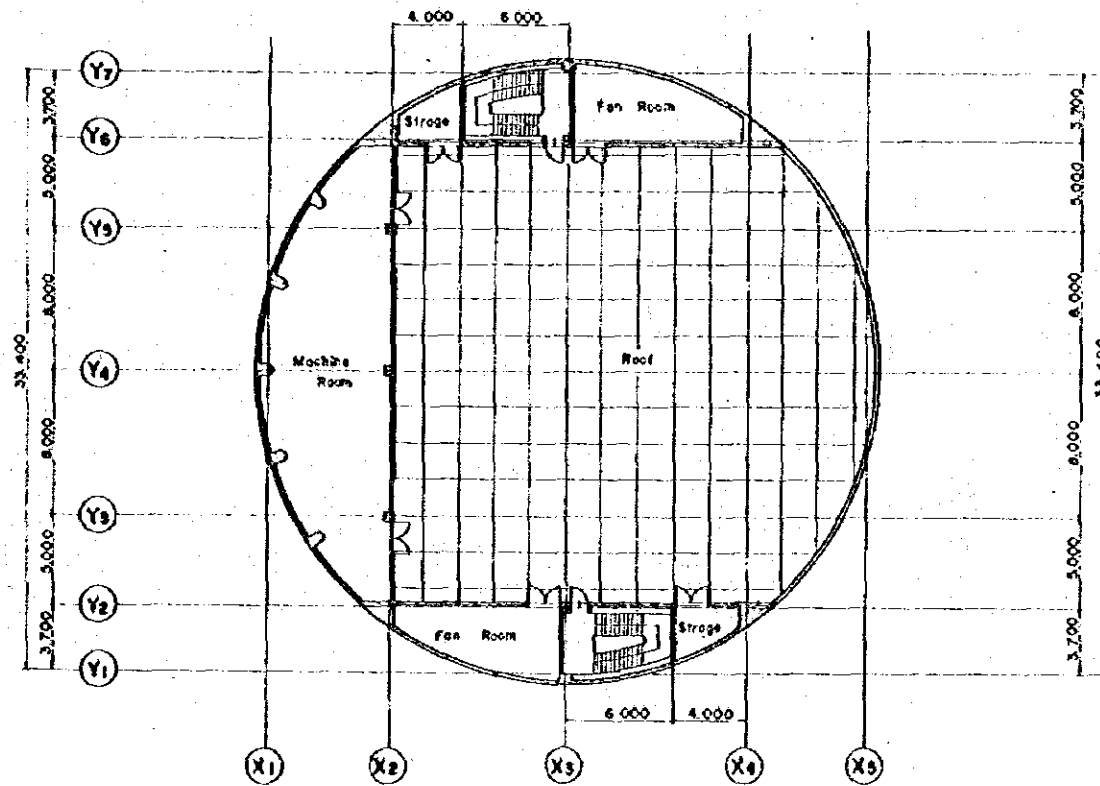
FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY      NIKON SUDO CONSULTANTS CO., LTD. TOKYO, JAPAN

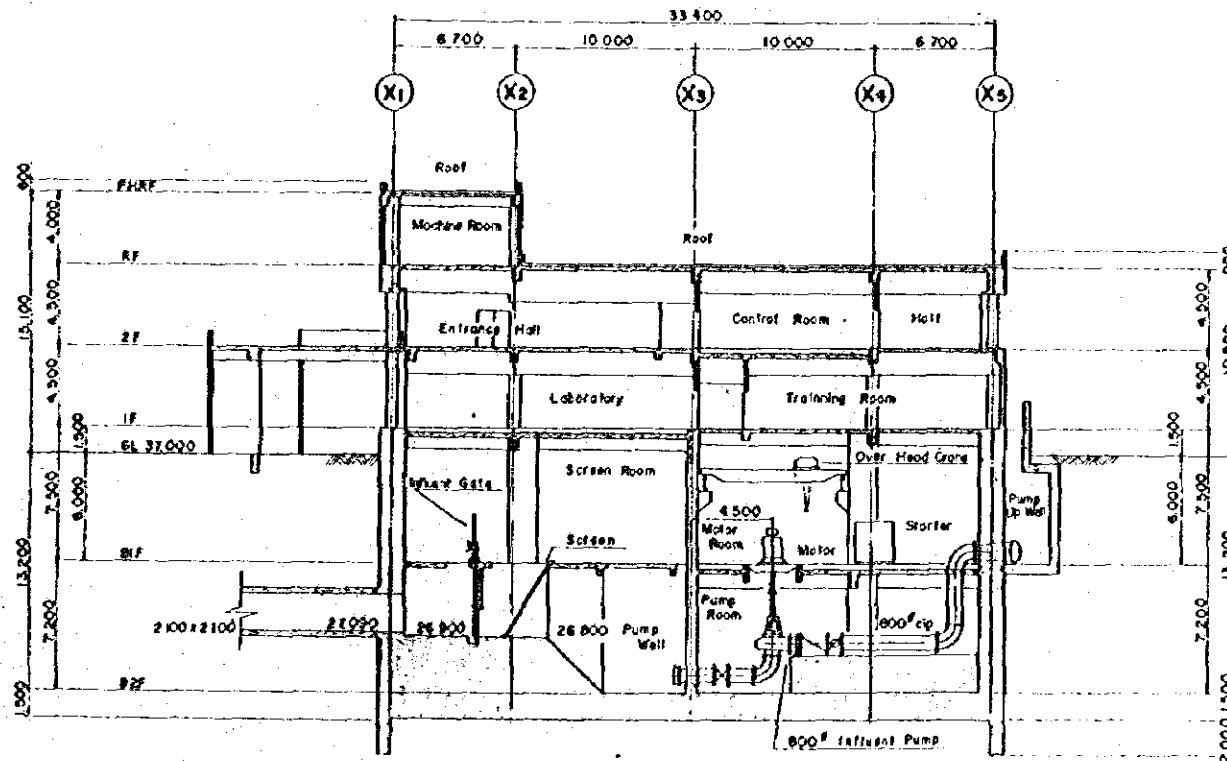
PUMPING AND OPERATING BUILDING. -1-

FIGURE 25

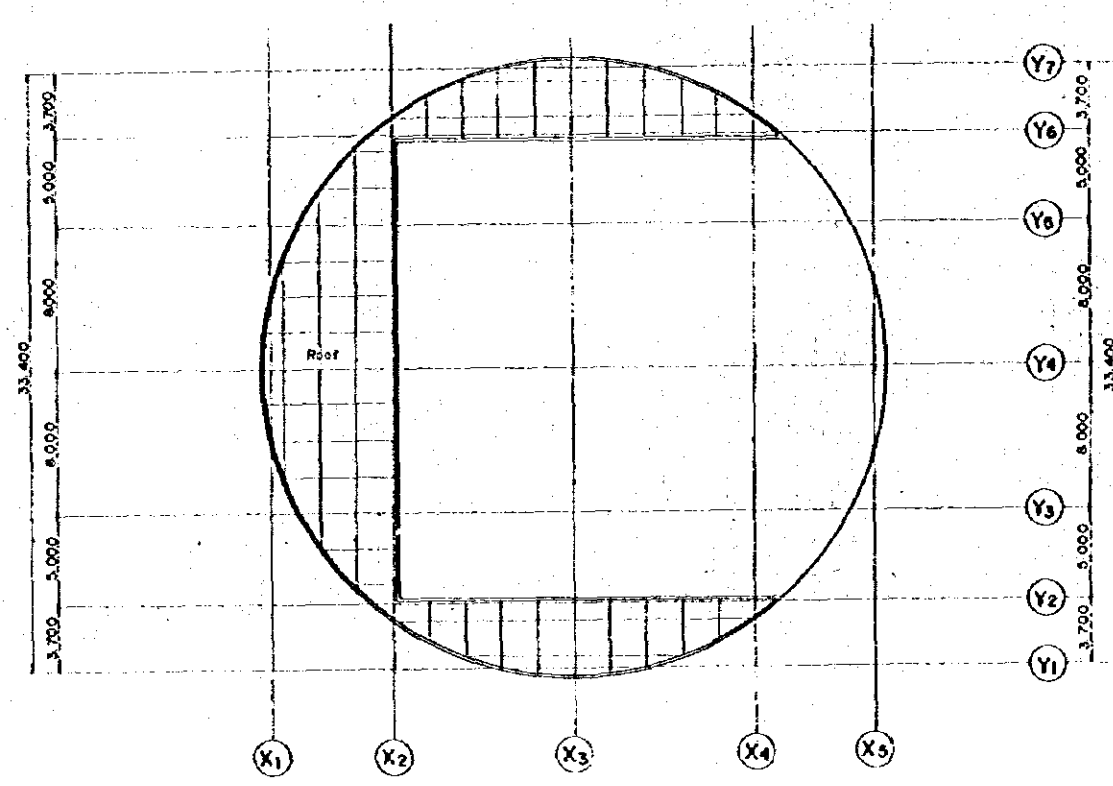
Pent House Floor Plan S-1:200



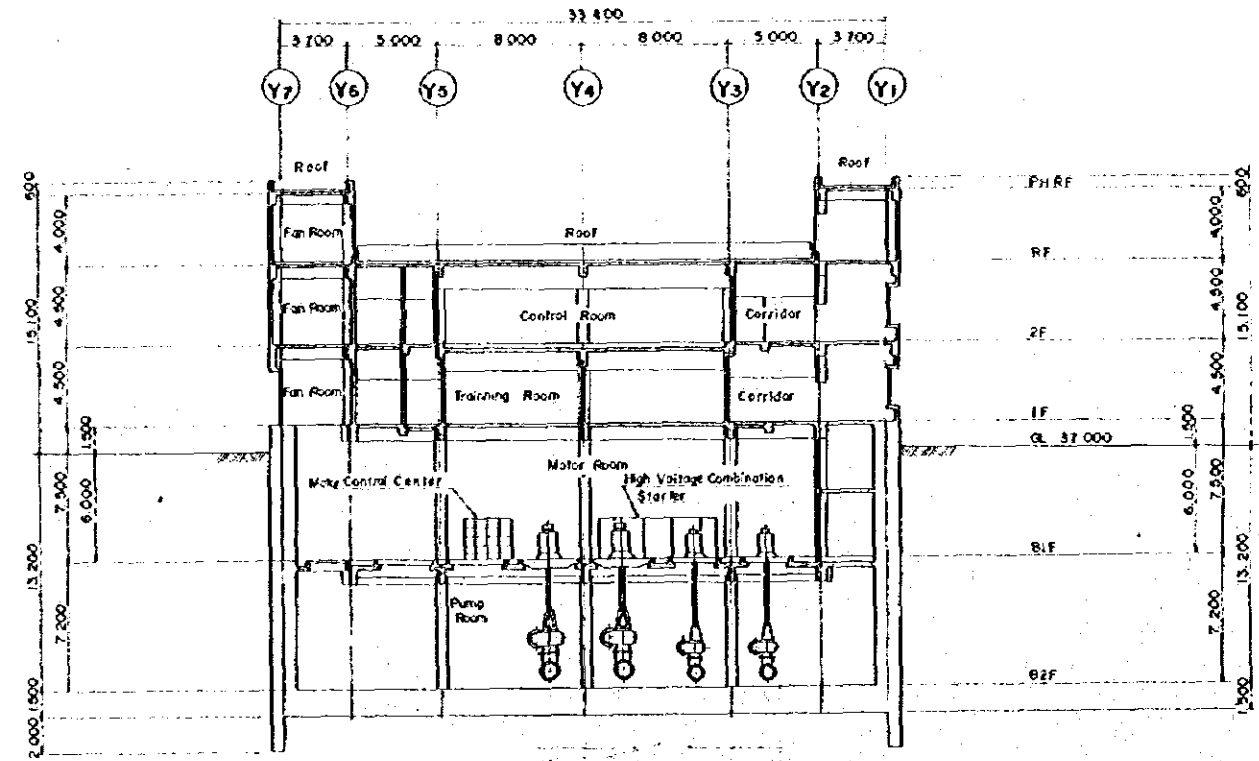
Section X-X S-1:200



Roof Floor Plan S-1:200

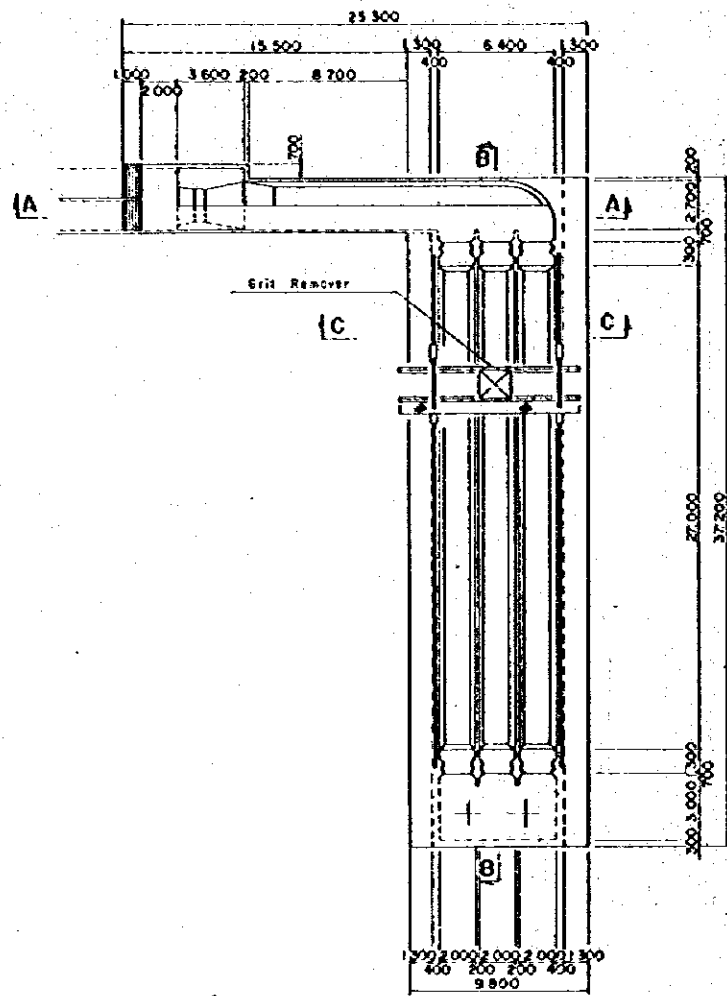


Section Y-Y S-1:200

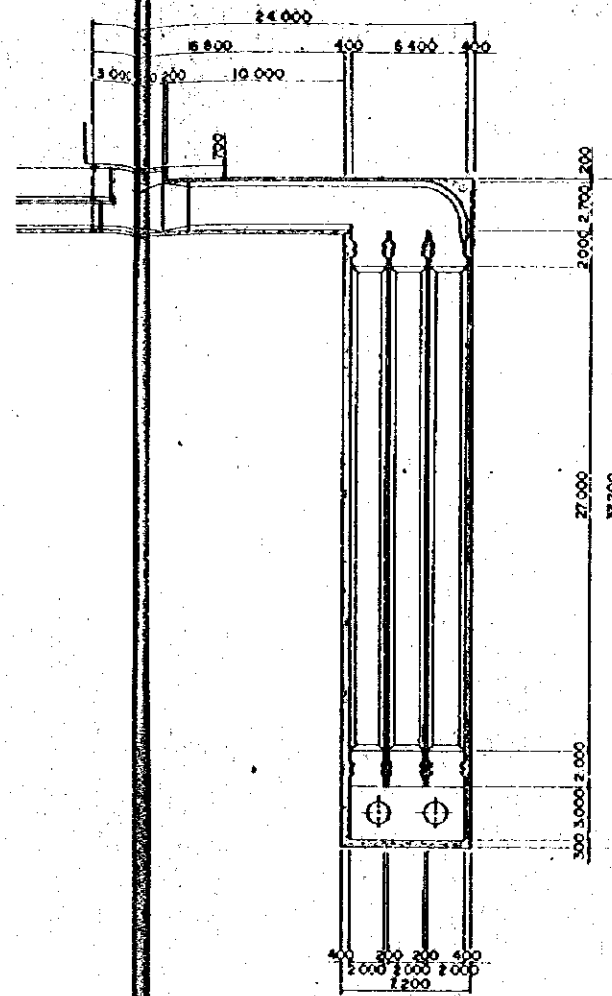


No. 2 Inflow Pump No. 1 Inflow Pump  
 800<sup>3</sup> 800<sup>3</sup> 1500<sup>3</sup> 2000<sup>3</sup> 600<sup>3</sup> 450<sup>3</sup> 1500<sup>3</sup> 1500<sup>3</sup>

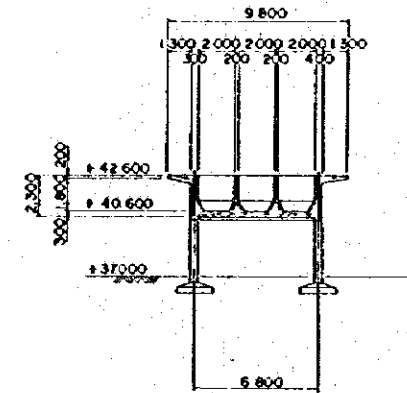
Plan of Grit Chamber 5-1:200



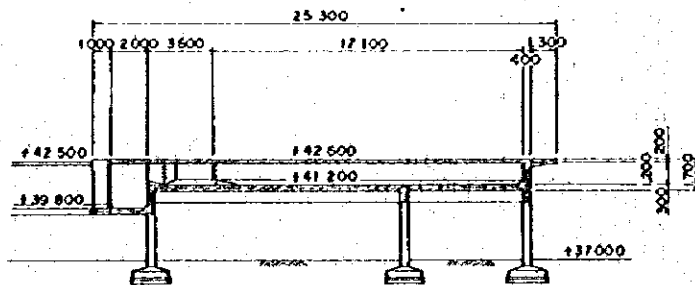
Horizontal Section of Grit Chamber 5-1:200



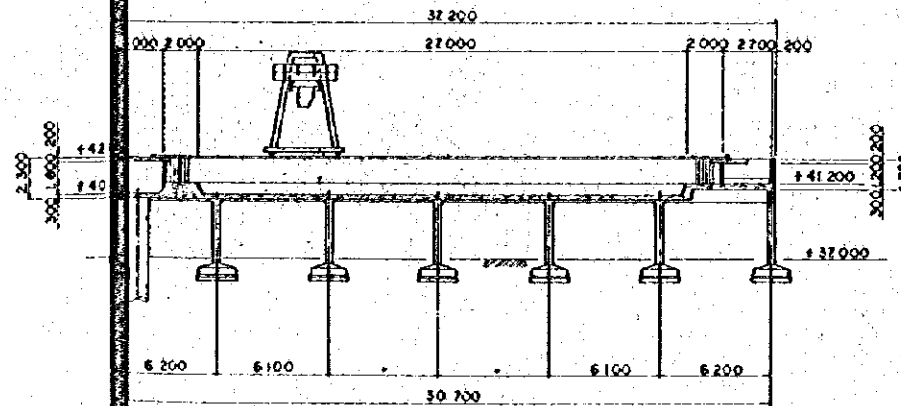
Section C-C



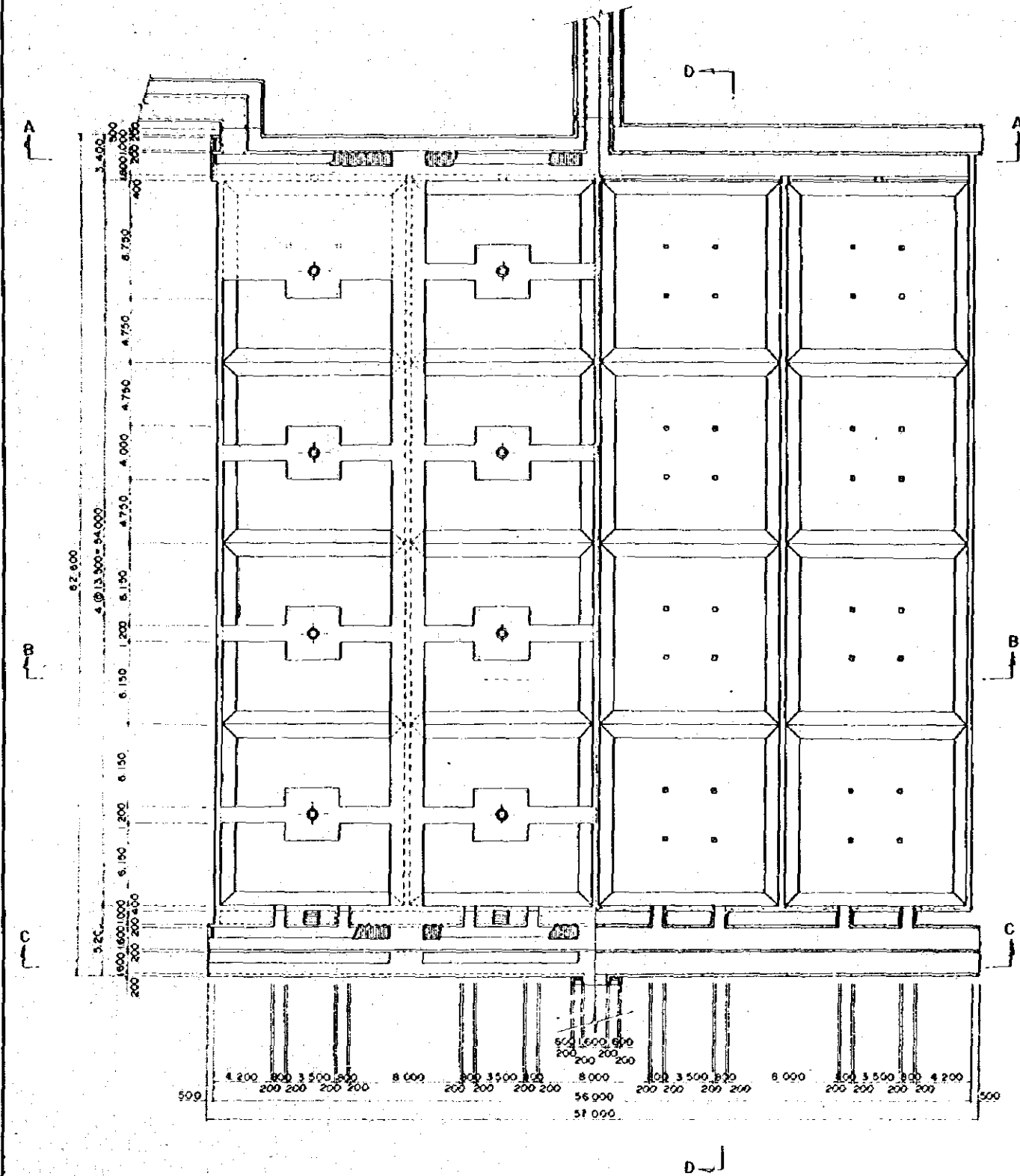
Section A-A



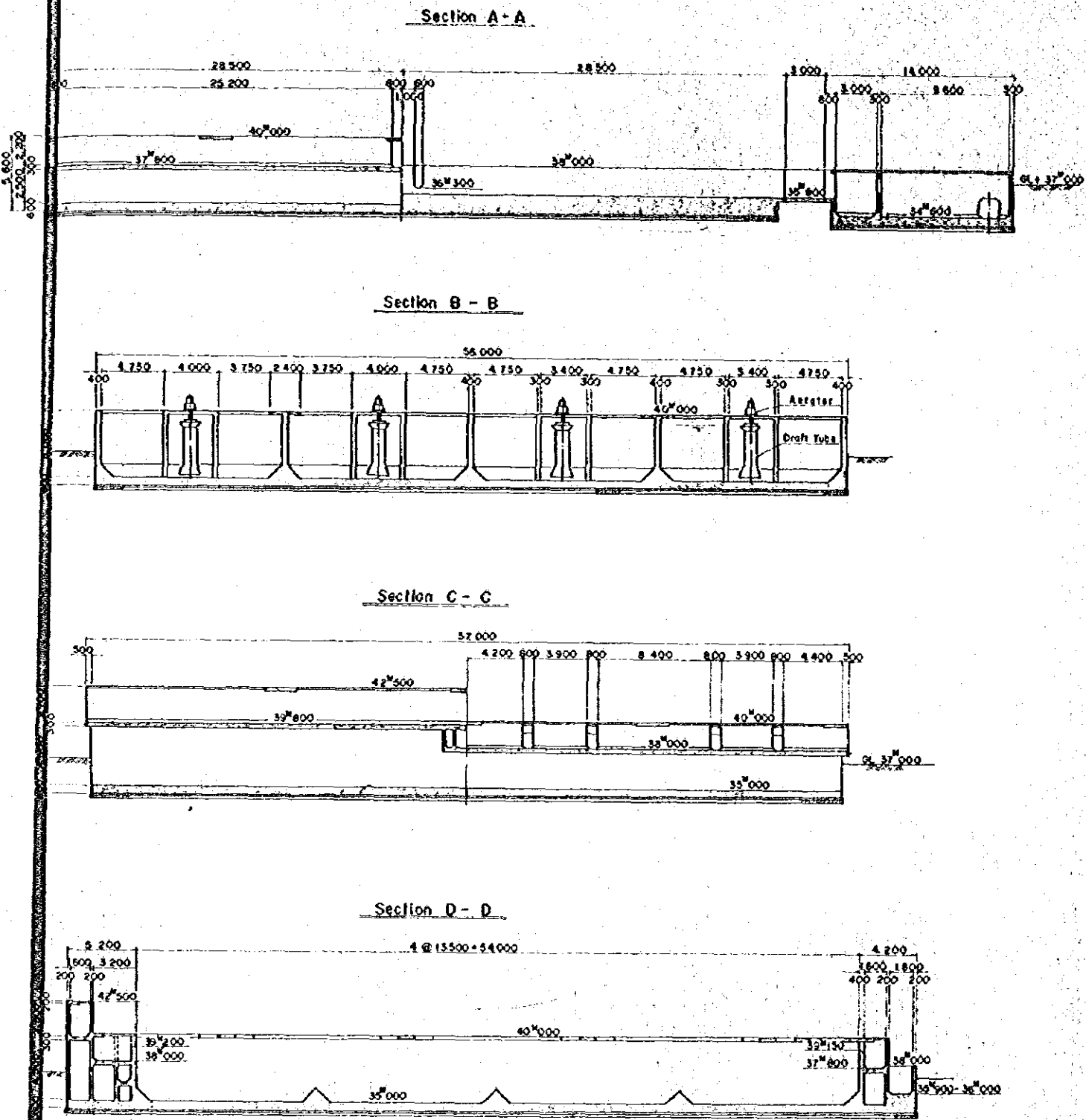
Section B-B



Plan of Aeration Tank S-1200



Section of Aeration Tank S-1200

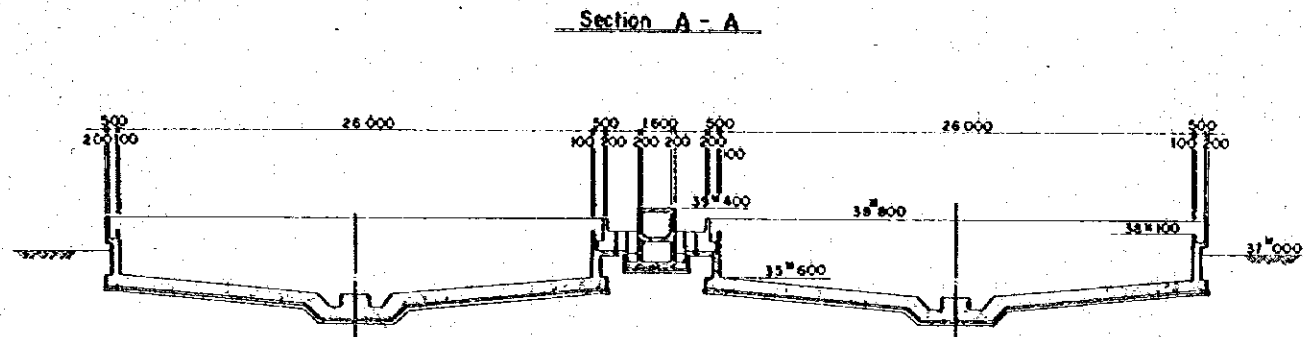


FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

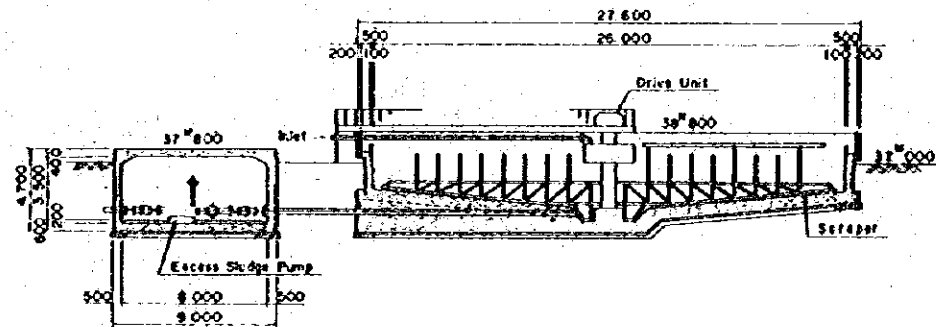
JAPAN INTERNATIONAL COOPERATION AGENCY      NIKKEN SUKHO CONSULTANTS CO., LTD.  
TOKYO, JAPAN

PLAN AND SECTION OF AERATION TANK      FIGURE 28

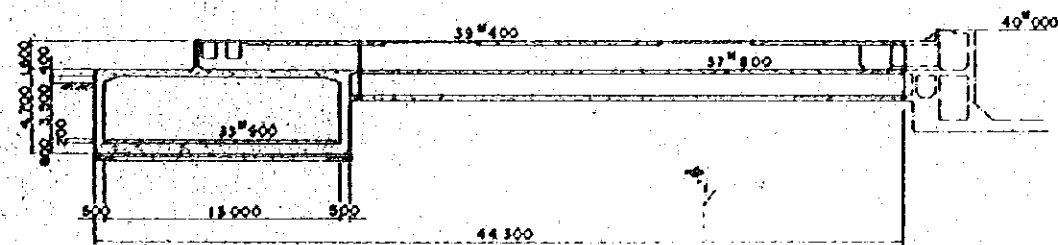
Section of Final Sedimentation Tank s=1:200



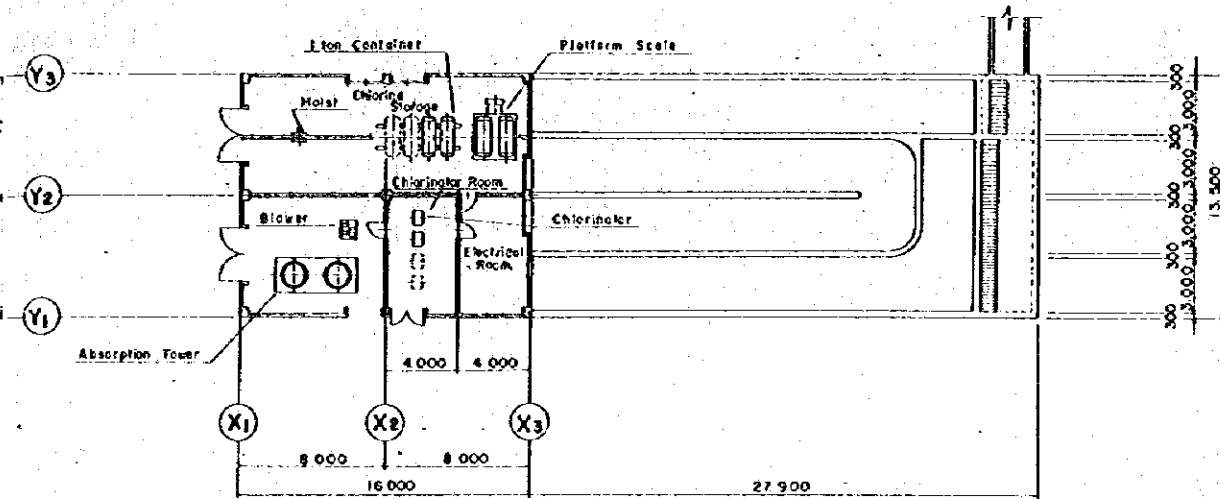
Section B-B



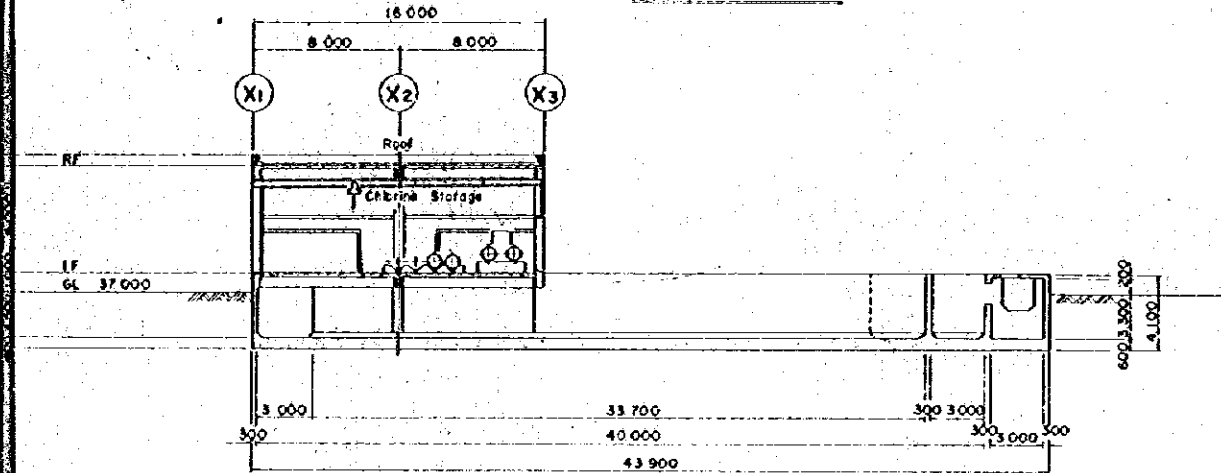
Section C-C



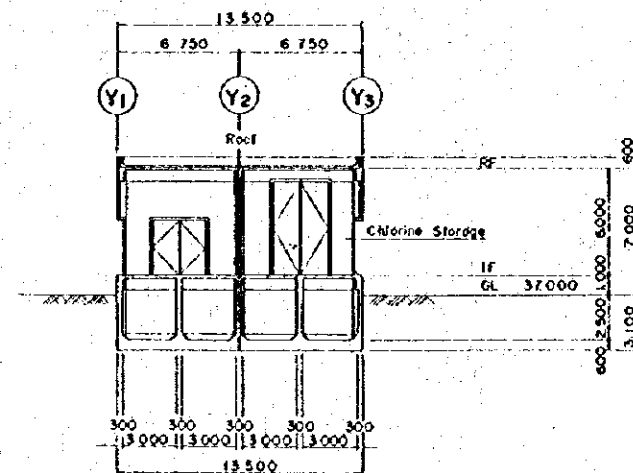
Plan of Chlorination Chamber s=1:200



Section X-X s=1:200



Section Y-Y s=1:200

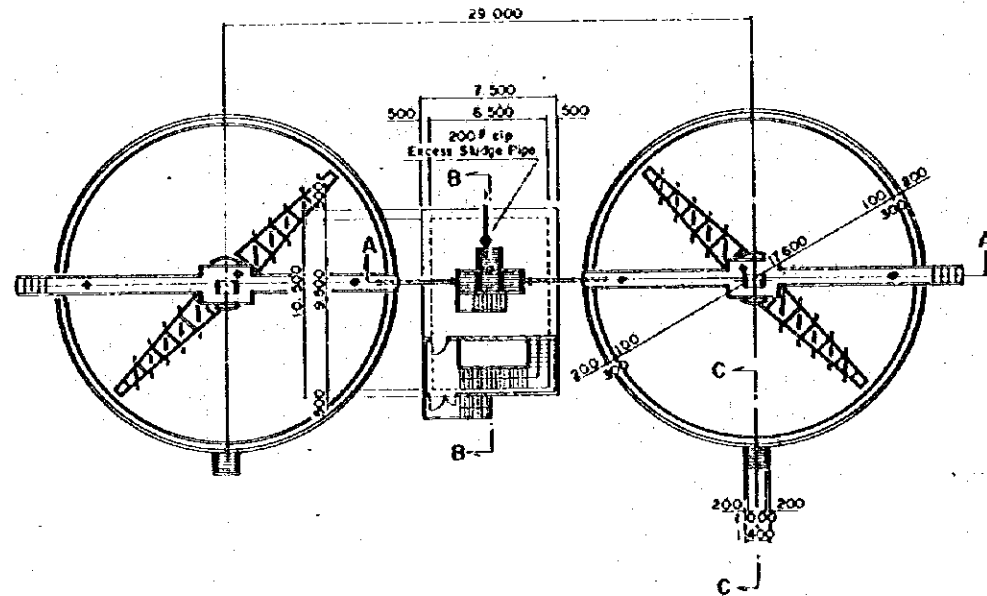


FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

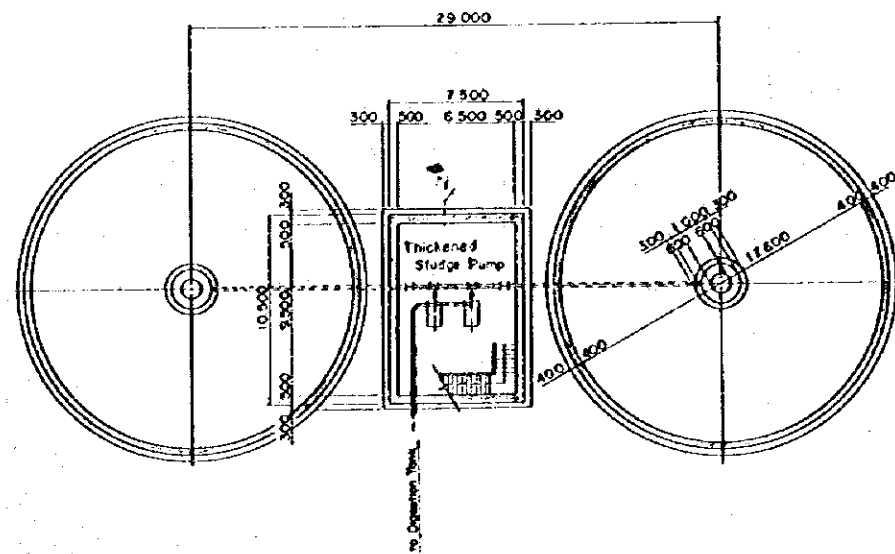
JAPAN INTERNATIONAL COOPERATION AGENCY      NIPPON KAIWA CONSULTANTS COLTD  
TOKYO, JAPAN

SECTION OF FINAL SEDIMENTATION TANK,      FIGURE  
PLAN AND SECTION OF CHLORINATION CHAMBER 29

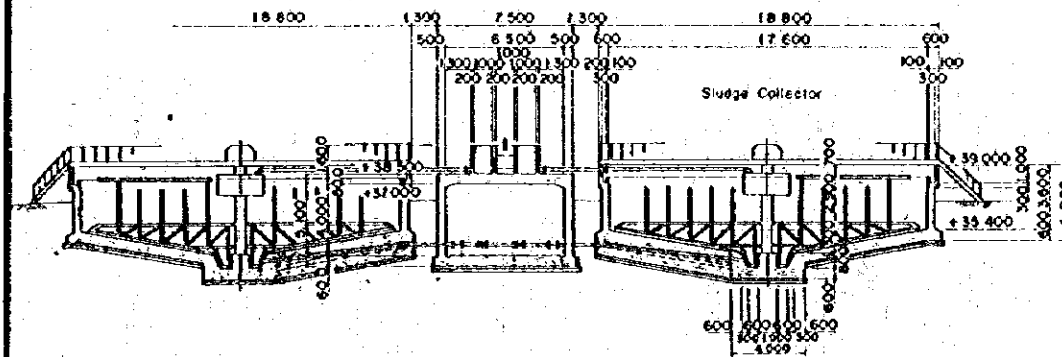
Plan of Thickening Tank s = 1 : 200



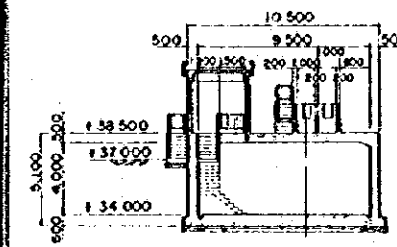
Horizontal Plan of Thickening Tank s = 1 : 200



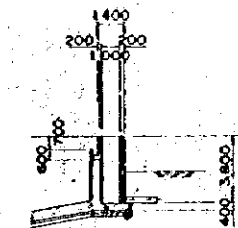
Section A-A



Section B-B



Section C-C



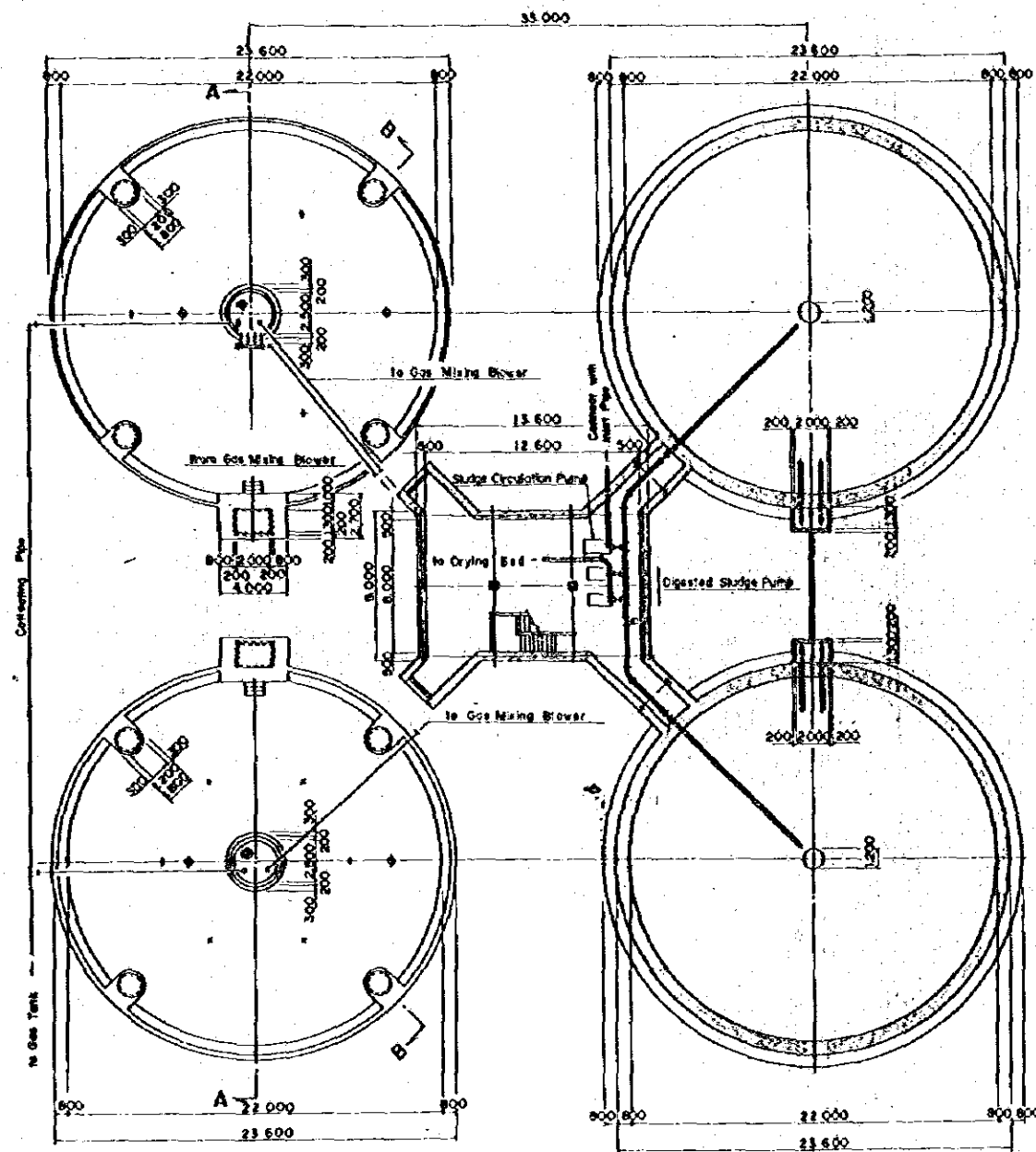
FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

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NIPON SUDO CONSULTANTS CO., LTD  
TOKYO, JAPAN

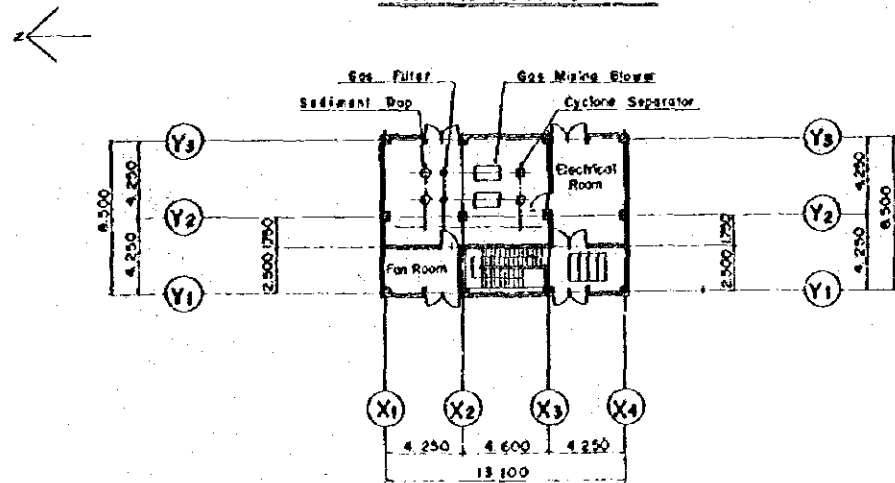
PLAN AND SECTION OF THICKENING TANK  
FIGURE 30



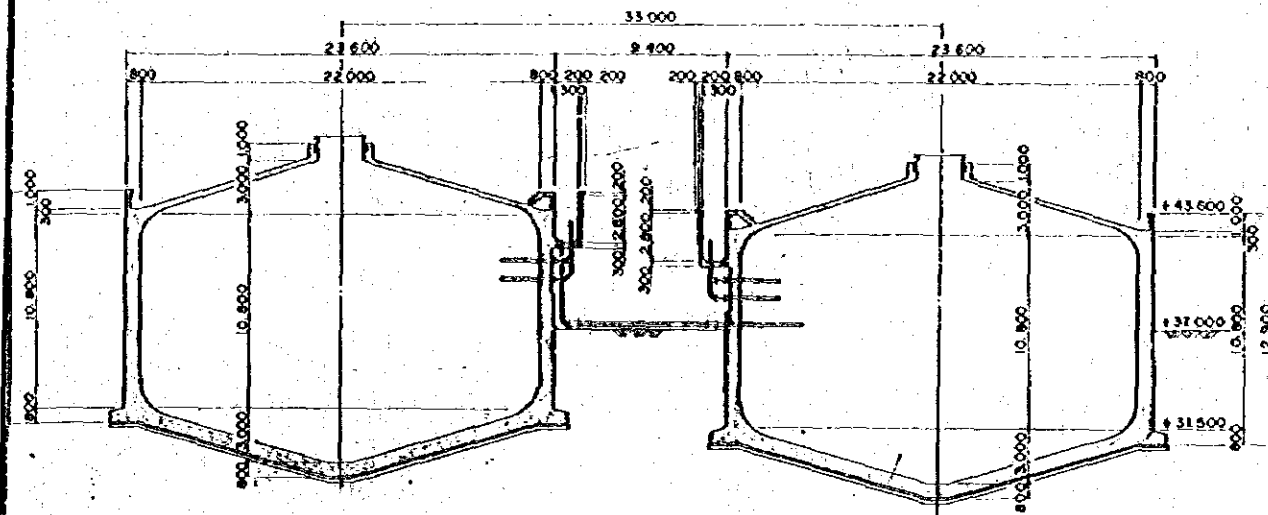
Plan of Digestion Tank 5:1:200



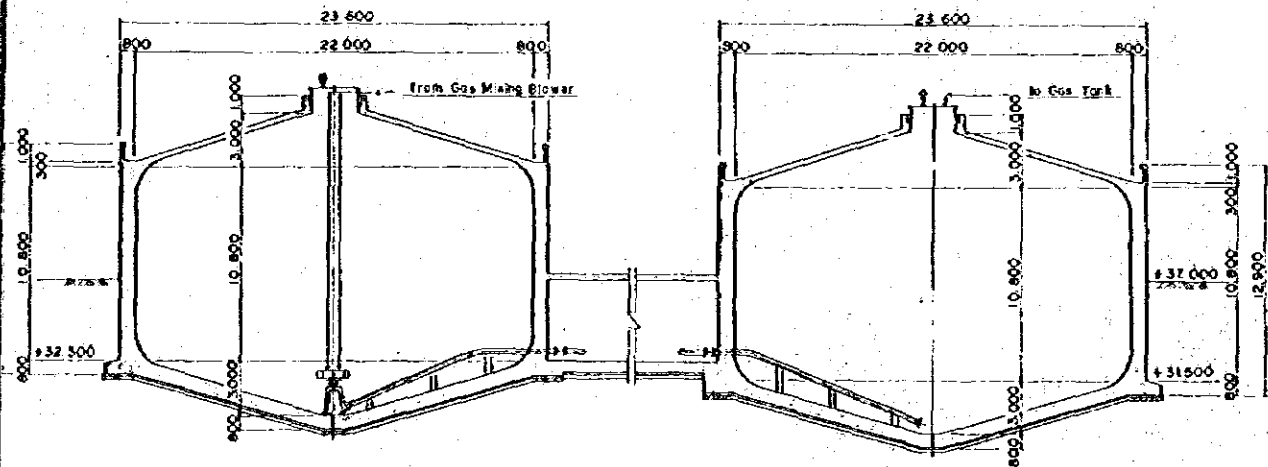
1st Floor Plan 5:1:200



Section A-A



Section B-B



FEASIBILITY STUDY FOR BANGKOK  
SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A)  
IN KINGDOM OF THAILAND

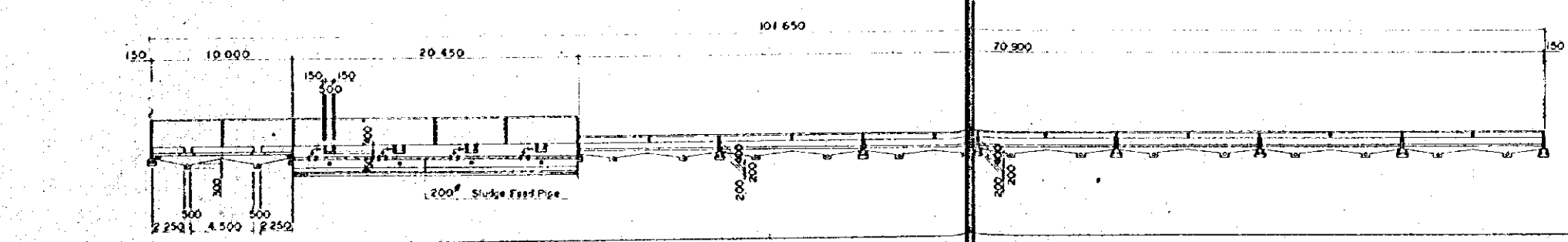
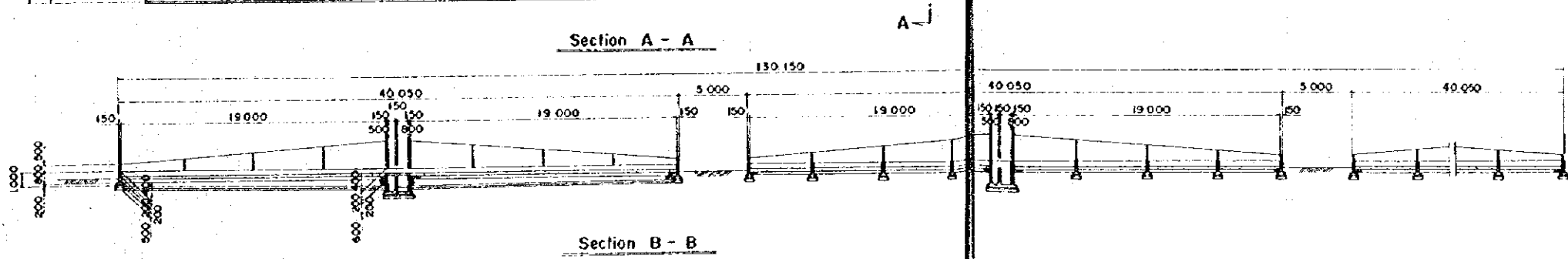
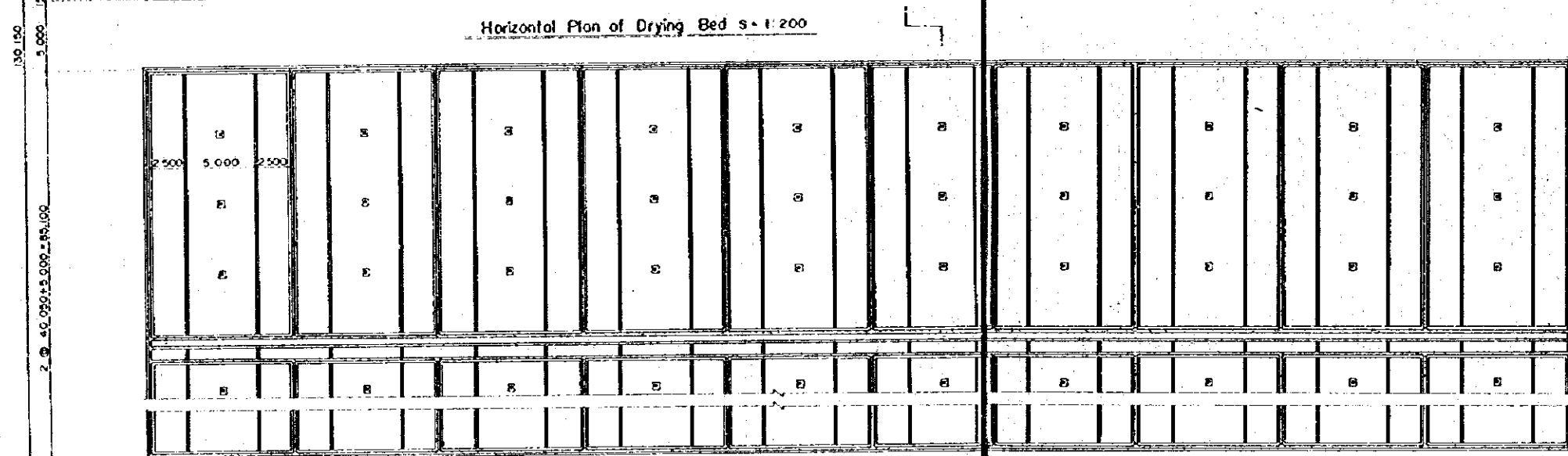
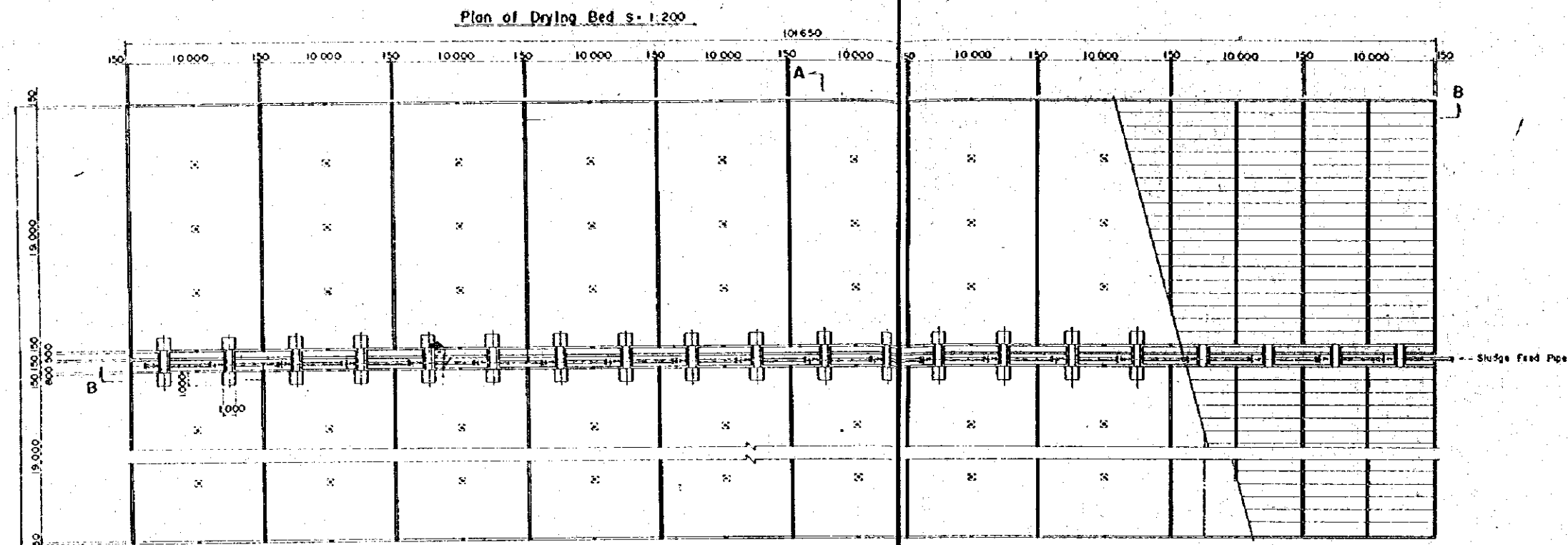
JAPAN INTERNATIONAL  
COOPERATION AGENCY

NIHON SOKO CONSULTANTS CO., LTD  
TOKYO, JAPAN

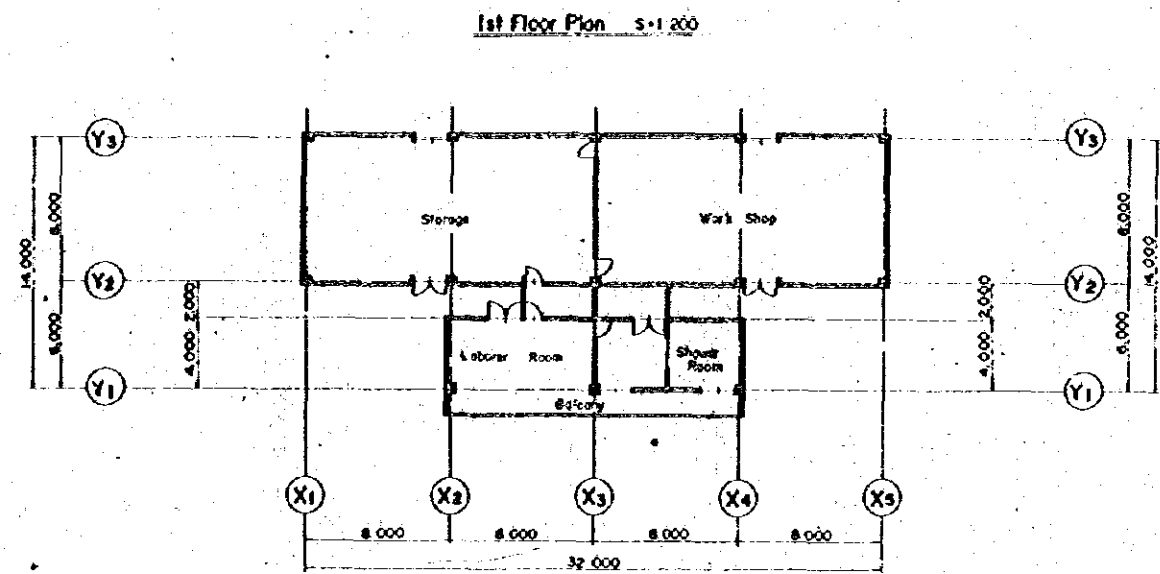
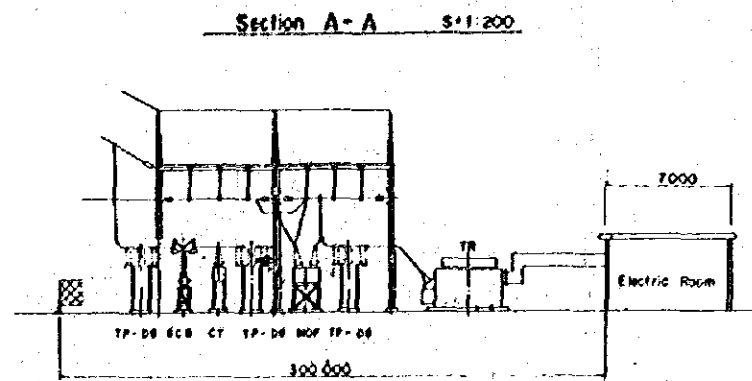
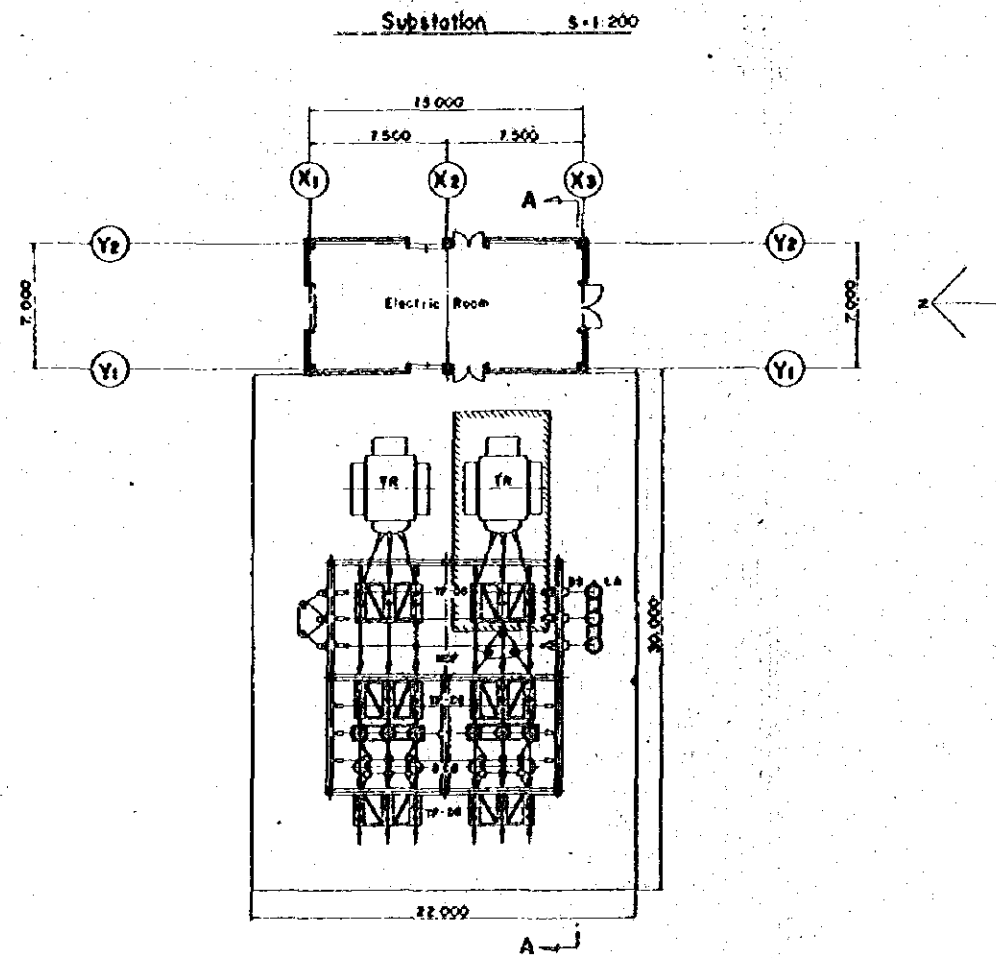
PLAN AND SECTION OF DIGESTION TANK

FIGURE

31



FEASIBILITY STUDY FOR BANGKOK SEWERAGE SYSTEM PROJECT (SUB-ZONE 2-A) IN KINGDOM OF THAILAND	
JAPAN INTERNATIONAL COOPERATION AGENCY	NIPPON SUDO CONSULTANTS CO., LTD TOKYO, JAPAN
PLAN AND SECTION OF DRYING BED	FIGURE 32



JICA